DOZORTSEVA, P.M.; LETINA, V.S.; MASHKOVSKIY, M.D.; MIKHR, Ye.A.; RABINOVICH, F.Ye.; ROMANCHUK, M.A.

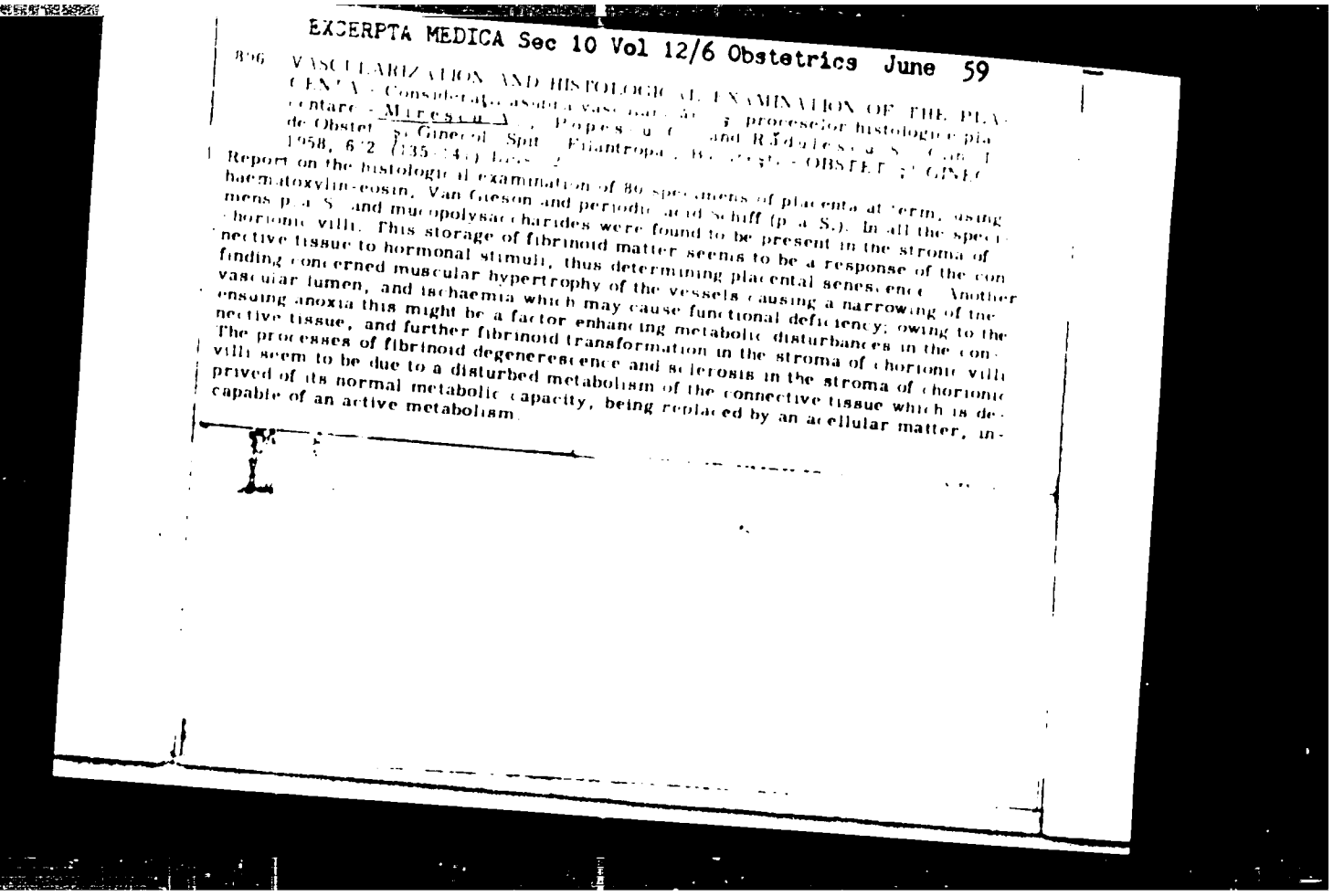
Magnesium trisilicate, its production and properties. Med.prom. 10 no.4:20-22 O-D '56. (MIRA 10:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S.Ordzhonikidze.
(MAGNESIUM SILICATES)

ABUREL, E., Prof; MIRESCU, A.; ELIAS, P.

The induction of labour through intersegmento-ovular tocogenic perfusions (the Aburel procedure). Rumanian M. Rev. 2 no.1:86-89 Jan-Mar 58.

(LABOR, INDUCED
intersegmental ovula perfusions of hypertonic saline solution, Aburel technic)
(PERFUSION
intersegmental ovula perfusions of hypertonic saline solution in induction of labor, Aburel technic)



EXCERPTA MEDICA Sec 10 Vol 12/6 Obstetrics June 59

806 VASCULARIZATION AND HISTOLOGIC EXAMINATION OF THE PLA-
CENTA - Considerations about a vascular [illegible] processes of histologic pla-
centare - Mirescu J., Popescu C. and Radulescu S. Cons. I
de Obstet. si Ginecol. Spit. Filantropia, Bucuresti - OBSTET. & GYNEC.
1958, 6/2 (135-143) Illus. 2

Report on the histologic examination of 80 specimens of placenta at term, using haematoxylin-eosin, Van Gieson and periodic acid Schiff (p.a.S.). In all the specimens p.a.S. and mucopolysaccharides were found to be present in the stroma of chorionic villi. This storage of fibrinoid matter seems to be a response of the connective tissue to hormonal stimuli, thus determining placental senescence. Another finding concerned muscular hypertrophy of the vessels causing a narrowing of the vascular lumen, and ischaemia which may cause functional deficiency; owing to the ensuing anoxia this might be a factor enhancing metabolic disturbances in the connective tissue, and further fibrinoid transformation in the stroma of chorionic villi. The processes of fibrinoid degenerescence and sclerosis in the stroma of chorionic villi seem to be due to a disturbed metabolism of the connective tissue which is deprived of its normal metabolic capacity, being replaced by an acellular matter, incapable of an active metabolism.

E-04580-65

ACCESSION NR: AP5023131 RU/0012/64/000/004/0657/0666 19

AUTHOR: Longhin, S. (Professor, Doctor, Lieutenant General); Popescu, A. (Corresponding member ARPR, Lieutenant Colonel); Zamfir, E. (Pharmacist); Hirescu, E. (Pharmacist); Vartolomeu, M. (Candidate of medical sciences, Colonel, Pharmacist)

TITLE: Prevention of photodermatoses

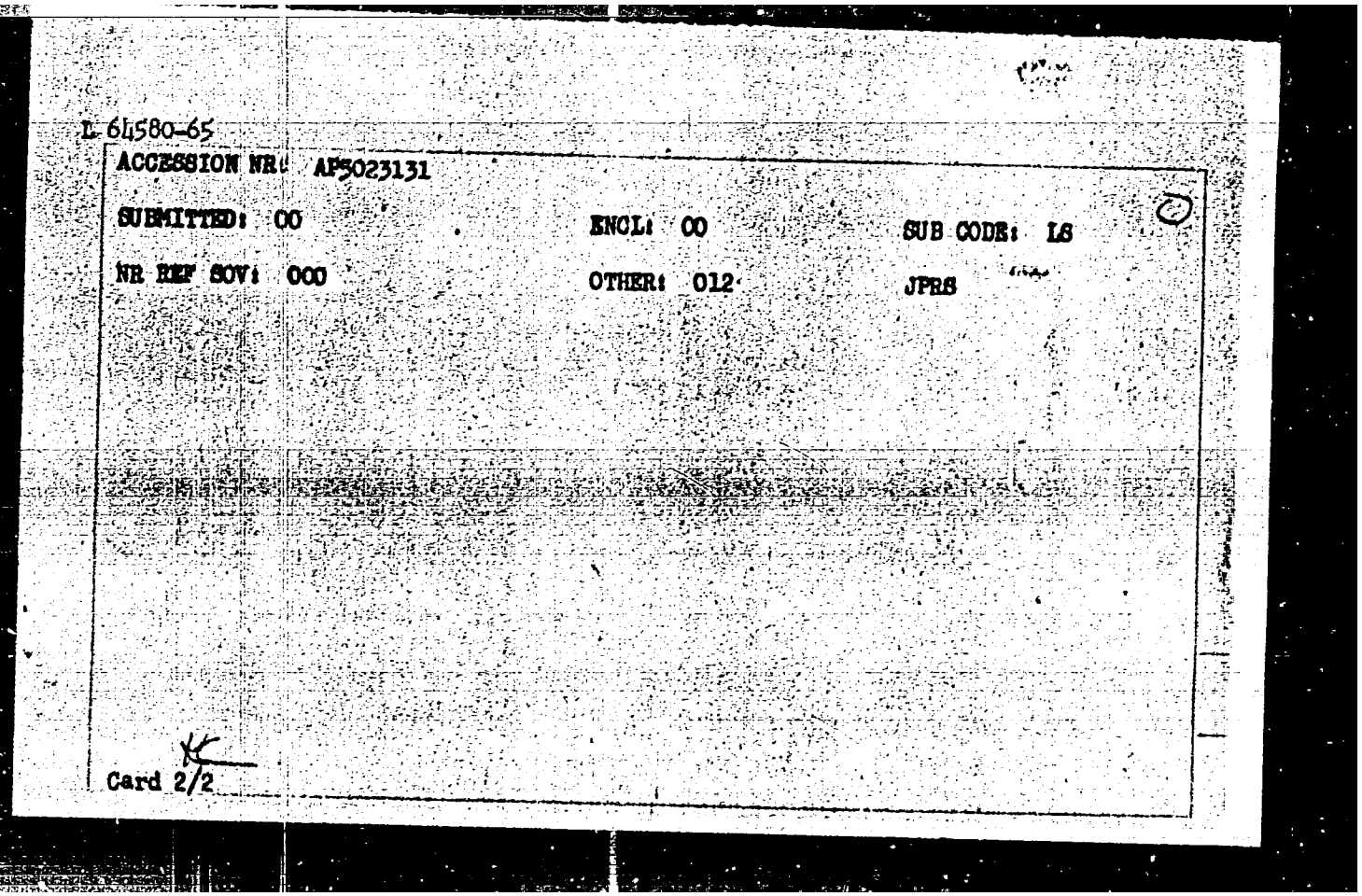
SOURCE: Revista sanitara militara, no. 4, 1964, 657-666

TOPIC TAGS: tissue disease, external medicant

ABSTRACT: Study with 16 different ointment, 4 emulsion and 5 solution dosage forms of common photoprotective preparations having as active ingredients PAS, PABA, ZnO, antipyrine, quinine, tannic acid: stability, release. Despite a number of minor disadvantages, ointments are still the most suitable dosage form for the purpose. One Czech, 1 Polish, 1 Soviet, 2 Rumanian and 8 Western references. Orig. art. has: 1 figure, 1 formula.

ASSOCIATION: none

Card 1/2



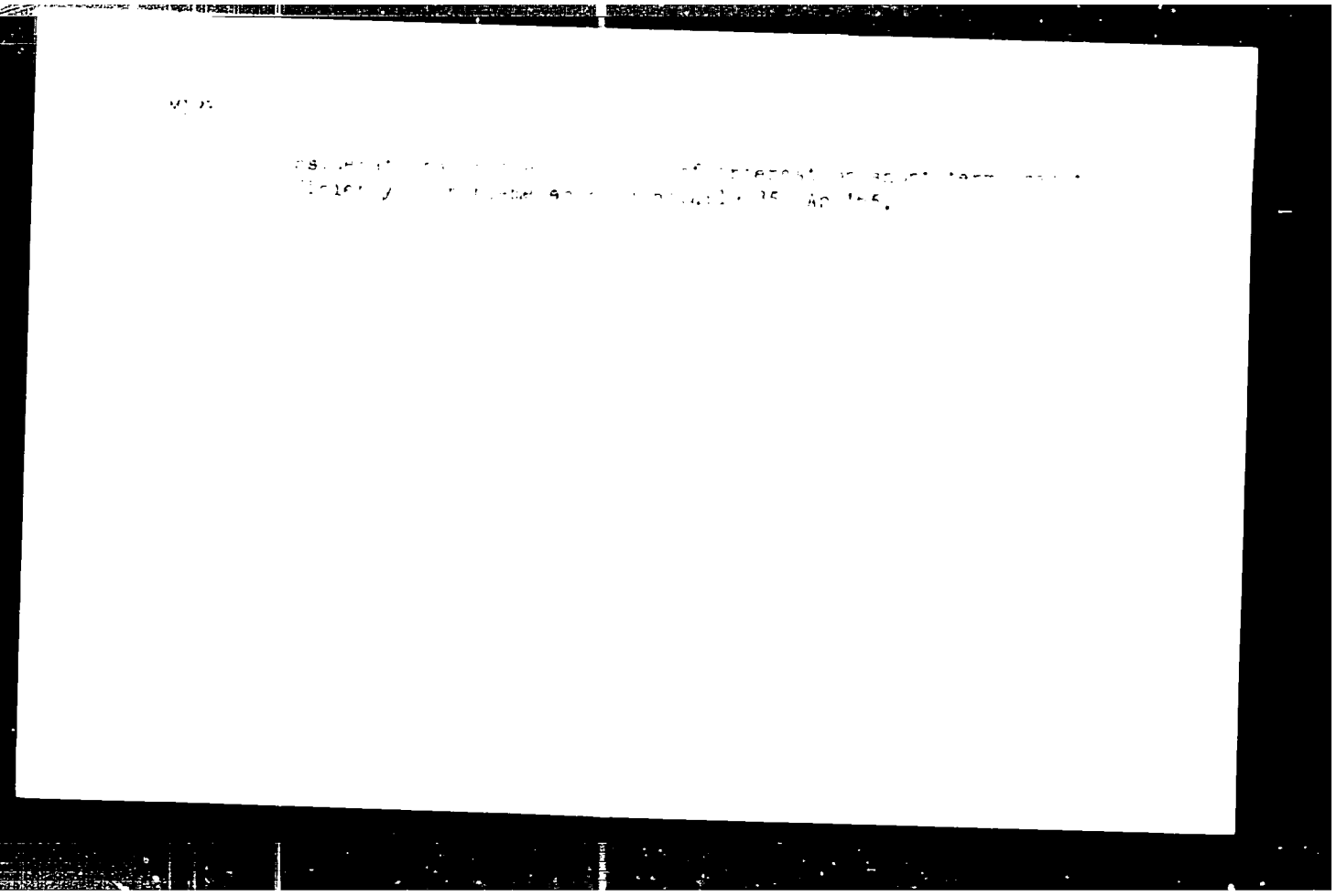
L 64580-65

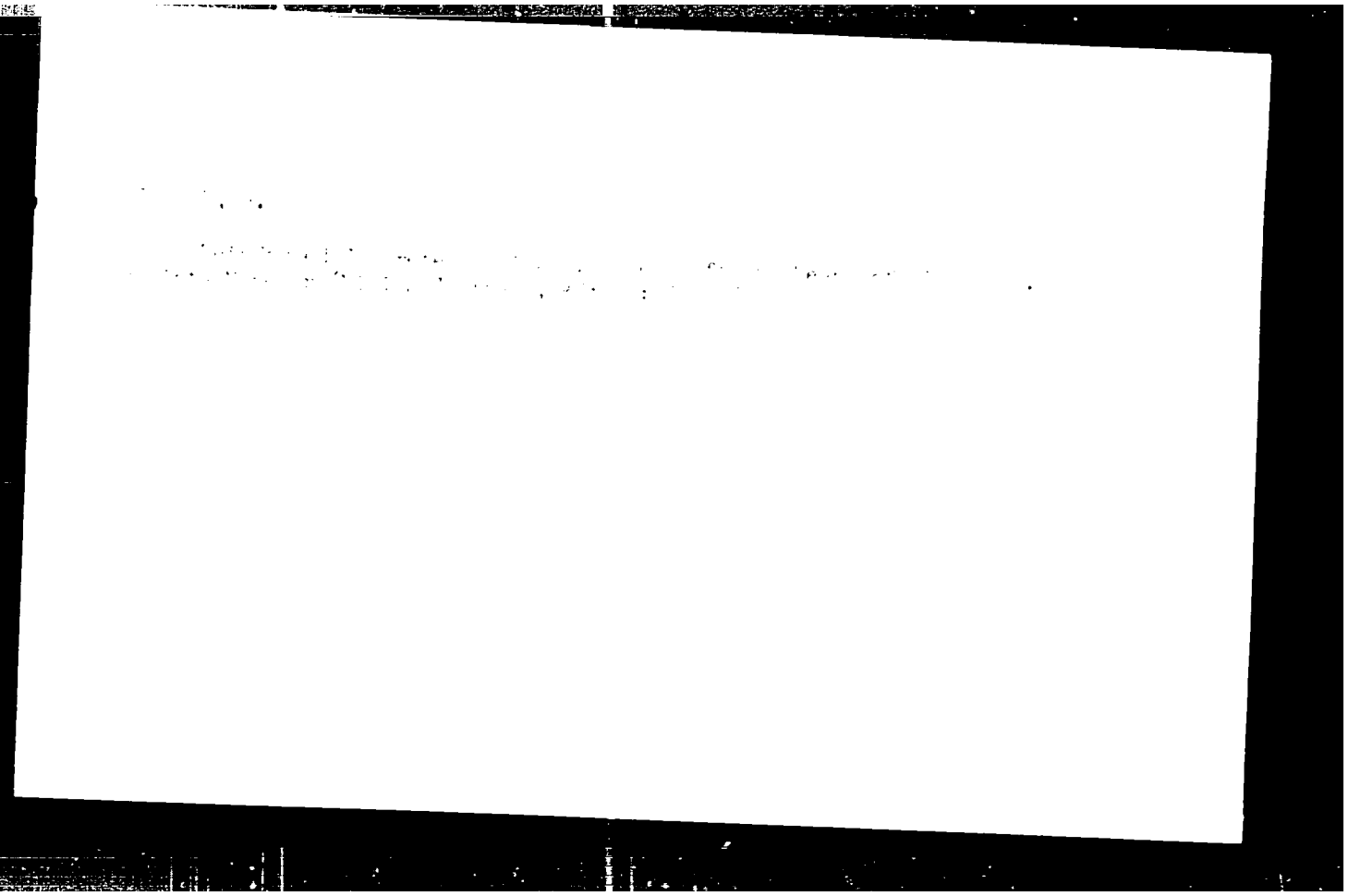
ACCESSION NR: AP5023131

SUBMITTED: 00 ENCL: 00 SUB CODE: LS

NR REF SOV: 000 OTHER: 012 JPRS

Card 2/2





MIRESCU, Nicolae

First species displacements in the epure with null fundamental dihedral. Bul Inst Politeh 26 no.3:55-59 My-Je '64.

1. Chair of Descriptive Geometry and Drawing (I), Polytechnic Institute, Bucharest.

MIRETSKAYA, R.L.; SMIGIREVA, O.V.; SAMSONOVA, N.F.; PUZEY, O.V.

Distribution of opisthorchiasis in Chernigov Province. Med.paraz. i paraz.bol. 27 no.1:110 Ja-F '58. (MIRA 11:4)

1. Iz parazitologicheskogo otdela Chernigovskoy oblastnoy sanitarno-epidemiologicheskoy stantsii.
(CHERNIGOV PROVINCE--DISTOMATOSIS)

MI[illegible]TSKAYA, [illegible]

"The Condition of the Cardio Vascular System in Silicosis Cases," Sov. Med., No. 8, 1940.

Prof., Chair Propaedeutic Therapy, Kirgiz Med. Inst., -c1940-.

KITAYEV, M.I.; MIRETSKAYA, S.G.; YAROSHENKO, N.N.

Some constructive changes in the Haldane gas analyzer. Lab. delo 7 no.12:42-43 D '61. (MIRA 14:11)

1. Patofiziologicheskaya laboratoriya (zav. - dotsent M.I.Kitayev) Kirgizskogo nauchno-issledovatel'skogo instituta tuberkuleza, Frunze.
(RESPIROMETER)

MIRETSKIY, L.A.

USSR/Engineering - Machine tools

Card 1/1 Pub. 103 - 19/29

Authors : Miretskiy, L. A.

Title : A device for sawing and finishing openings and loops in various drill arbors

Periodical : Stan. i instr. 10, page 33, Oct 1954

Abstract : A narrative report is presented concerning the use of a simple device which facilitates sawing and finishing openings and loops in drill arbors, and results in saving time. Drawings.

Institution : ...

Submitted : ...

MIRETSKIY, O. Ya.

1937. Trivalist'zhittya. ascaris lumbricoides L.V. Knige: "Trudy Konferentsii Po Medichnoi Po Medichnoi Biologii", KNIV.

MIRETSKIY, O. Ya.

Miretskiy, O. Ya. "Onchospheres of swine and bull tapeworms", Sbornik rabot po gel'mintologii (Vsesoyuz. in-t gel'mintologii im. akad. Skryabina), Moscow, 1948, p. 128-30.

SO:U-3042, 11 March 53, (Letopis'nykh Statey, No. 10, 1949).

MIRETSKIY, O. Ya.

Otezvrezhivaniye Yaits Gel'mintov Goryachim Vozdukhom, "Works on Helminthology" on the 75th Birthday of K. I. Skryabin, Izdak, Akad. Nauk, SSSR, Moskva, p. 406

Chair Biology, Crimean Medical Inst. im. I. V. Stalin and Helminthology Section, Governmental oldest Station

MIRETSKIY, O.Ya.

Attempt to control the processes of helminthic life cycle by changes in the organism of the host. Doklady Akad. nauk SSSR 78 no.3:613-615 21 May 1951. (CLML 20:9)

1. Crimean Medical Institute imeni I.F. Stalin, Simferopol'.
2. Presented by Academician K.I. Skryabin 24 March 1951.

MIRITSKIY, O.Ya.

Development of eggs of human Ascaris in various divisions of visible spectrum. Doklady Akad. nauk SSSR 82 no.6:1021-1024 21 Feb 1952.
(CIML 22:1)

1. Presented by Academician K. M. Skryabin 21 December 1951. 2. Crimean State Medical Institute imeni I. V. Stalin, Simferopol'.

MIRETSKIY, O.Ya.

Use of diathermy and of an electric field of ultra-high frequency in [illegible] minthization of trichocephaliasis and hymenolepiasis. Med.paraz.i parazit. bol. no.2:165-168 Mr-Ap '53. (MLRA 6:6)

1. Kafedra biologii Krymskogo meditsinskogo instituta imeni I.V.Stalina. 2. Simferopol'skaya oblastnaya protivomalyariynaya stantsiya. (Worms, Intestinal and parasitic) (Diathermy)

MIRETSKIY, Oskar Yakovlevich,

Crimean State Med Inst imeni Stalin, Academic degree of Doctor of Medical Sciences, based on his defense, 2[illegible] April 1954, in the Council of the Kazakh State Medical Inst, of his dissertation entitled: "Adaptation of the eggs of helminths and their significance in working out and putting into effect anti-helminth measures".

Academic degree and/or title: Doctor of Sciences

SO: Decisions of VAK, List no 8, 2 April 55, Byulleten' MVO SSSR, No. 14, July Moscow pp 4-2[illegible], Uncl. JPRS/NY-429

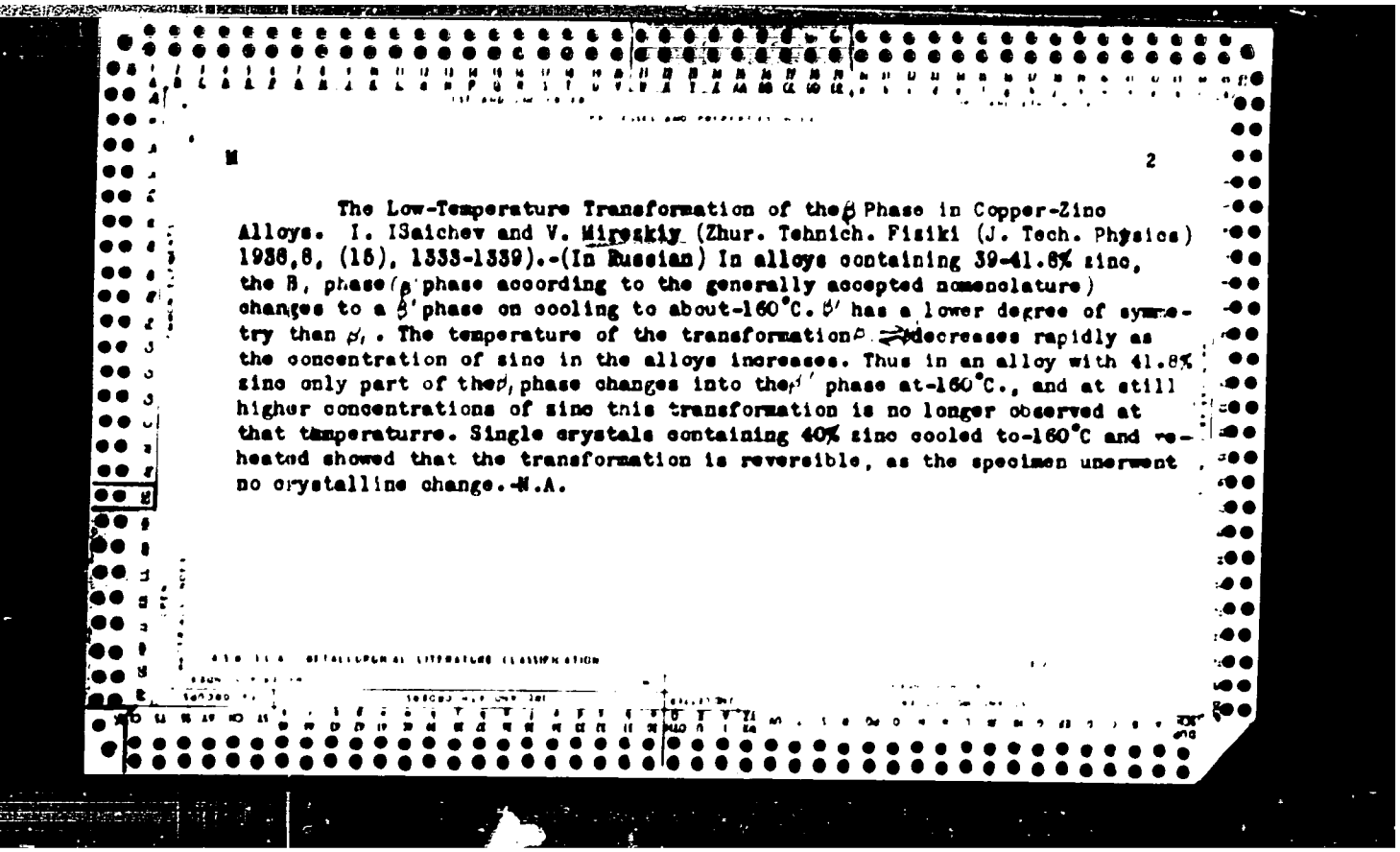
GRITSAY, M.K.; KLYUSHKINA, Ye.A.; MIRETSKIY, O.Ya.

Fourth Crimea Province Conference of Parasitologists. Med. paraz. i paraz. bol. 32 no.4:504 Jl-Ag '63. (MIRA 17:8)

AZAROVA, N.S.; MIRETSKIY, C.Ya.; SONIN, M.D.

First case of detecting the nematode [illegible] in a human in the U.S.S.R. Med. parazit. i parazit. bol. 34 no. 2 156-158 Mr-Ap '65.

1. Krymskiy meditsinskiy institut, Simferopol' and Gel'mintologicheskaya laboratoriya AN SSSR, Moskva.



The Low-Temperature Transformation of the β Phase in Copper-Zinc Alloys. I. ISaichev and V. Mirzskiy (Zhur. Tehnich. Fiziki (J. Tech. Physics) 1938,8, (16), 1333-1339).-(In Russian) In alloys containing 39-41.8% zinc, the B, phase (β phase according to the generally accepted nomenclature) changes to a β' phase on cooling to about-160°C. β' has a lower degree of symmetry than β. The temperature of the transformation $\beta \rightleftarrows \beta'$ decreases rapidly as the concentration of zinc in the alloys increases. Thus in an alloy with 41.8% zinc only part of the β phase changes into the β' phase at-160°C., and at still higher concentrations of zinc this transformation is no longer observed at that temperaturre. Single crystals containing 40% zinc cooled to-160°C and reheated showed that the transformation is reversible, as the specimen underwent no crystalline change.-M.A.

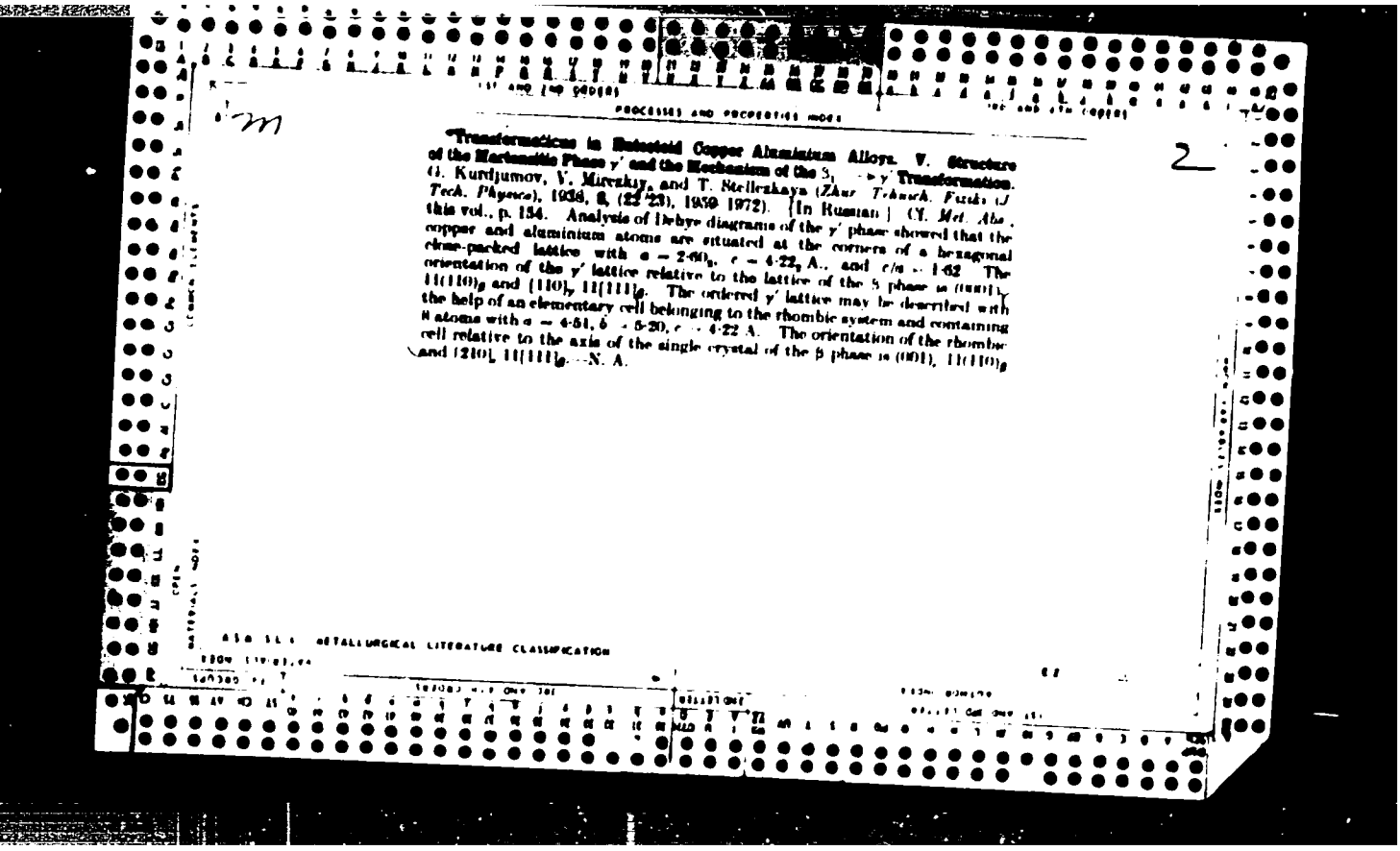
MIRETSKII, V.

[illegible]

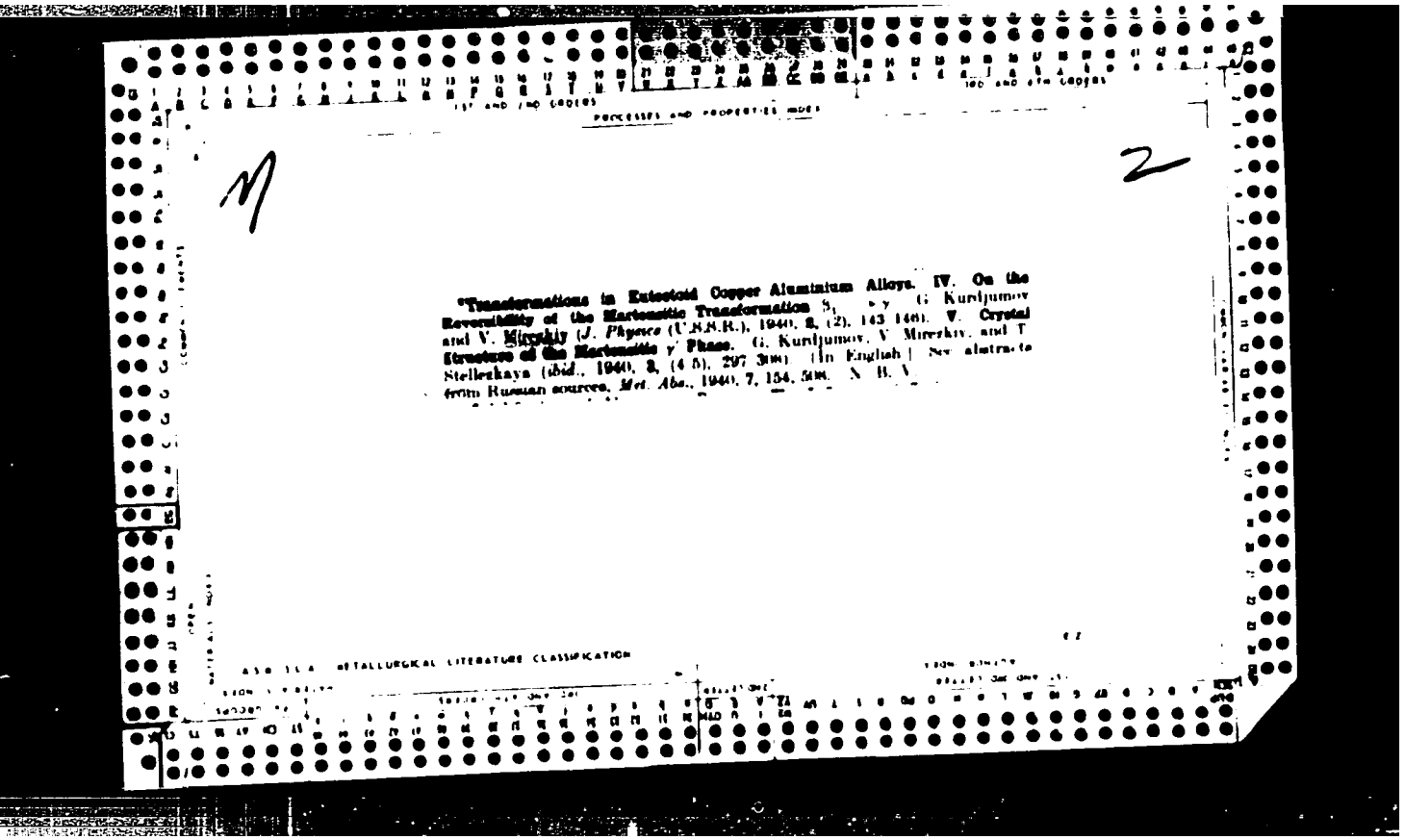
"[illegible]ion [illegible] [illegible]-[illegible]". [illegible] [illegible]ov [illegible] V. [illegible]. [illegible]) [illegible];
[illegible], 7377[9].

[illegible] v[illegible] of [illegible] x-ra[illegible] [illegible] β - [illegible] was [illegible]. The alloy conta[illegible] 1.[illegible] of A[illegible] room [illegible]. and γ - [illegible] in [illegible] ro[illegible]; as β - [illegible] formed i[illegible] the β_1- [illegible] at [illegible] is [illegible]. It is [illegible] by [illegible] is [illegible].
$\beta \rightarrow \gamma$ [illegible]

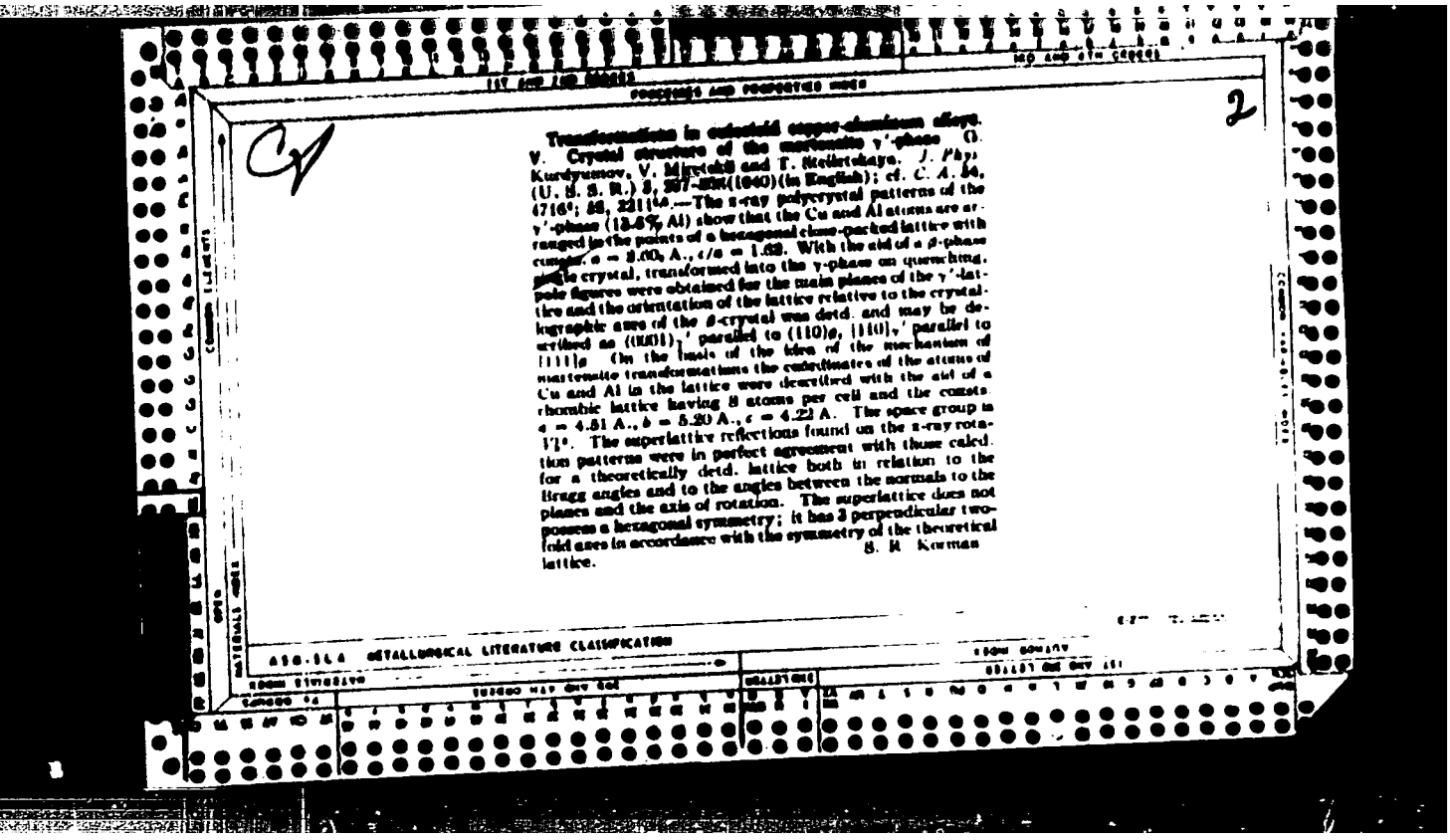
APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113



Transformations in Quenched Copper Aluminium Alloys. V. Structure of the Martensite Phase γ' and the Mechanism of the $\beta_1 \rightarrow \gamma'$ Transformation. G. Kurdjumov, V. Mirenkin, and T. Stellezhaya (*Zhur. Tekhn. Fiziki (J. Tech. Physics)*, 1956, **8**, (22-23), 1959-1972). [In Russian.] (*Cf. Met. Abs.*, this vol., p. 154. Analysis of Debye diagrams of the γ' phase showed that the copper and aluminium atoms are situated at the corners of a hexagonal close-packed lattice with $a = 2{\cdot}60_8$, $c = 4{\cdot}22_8$ A., and $c/a = 1{\cdot}62$. The orientation of the γ' lattice relative to the lattice of the β phase is $(110)_\gamma \| (110)_\beta$ and $[110]_\gamma \| [111]_\beta$. The ordered γ' lattice may be described with the help of an elementary cell belonging to the rhombic system and containing 6 atoms with $a = 4{\cdot}51$, $b = 5{\cdot}20$, $c = 4{\cdot}22$ A. The orientation of the rhombic cell relative to the axis of the single crystal of the β phase is $(001)_\gamma \| (110)_\beta$ and $[210]_\gamma \| [111]_\beta$.—N. A.

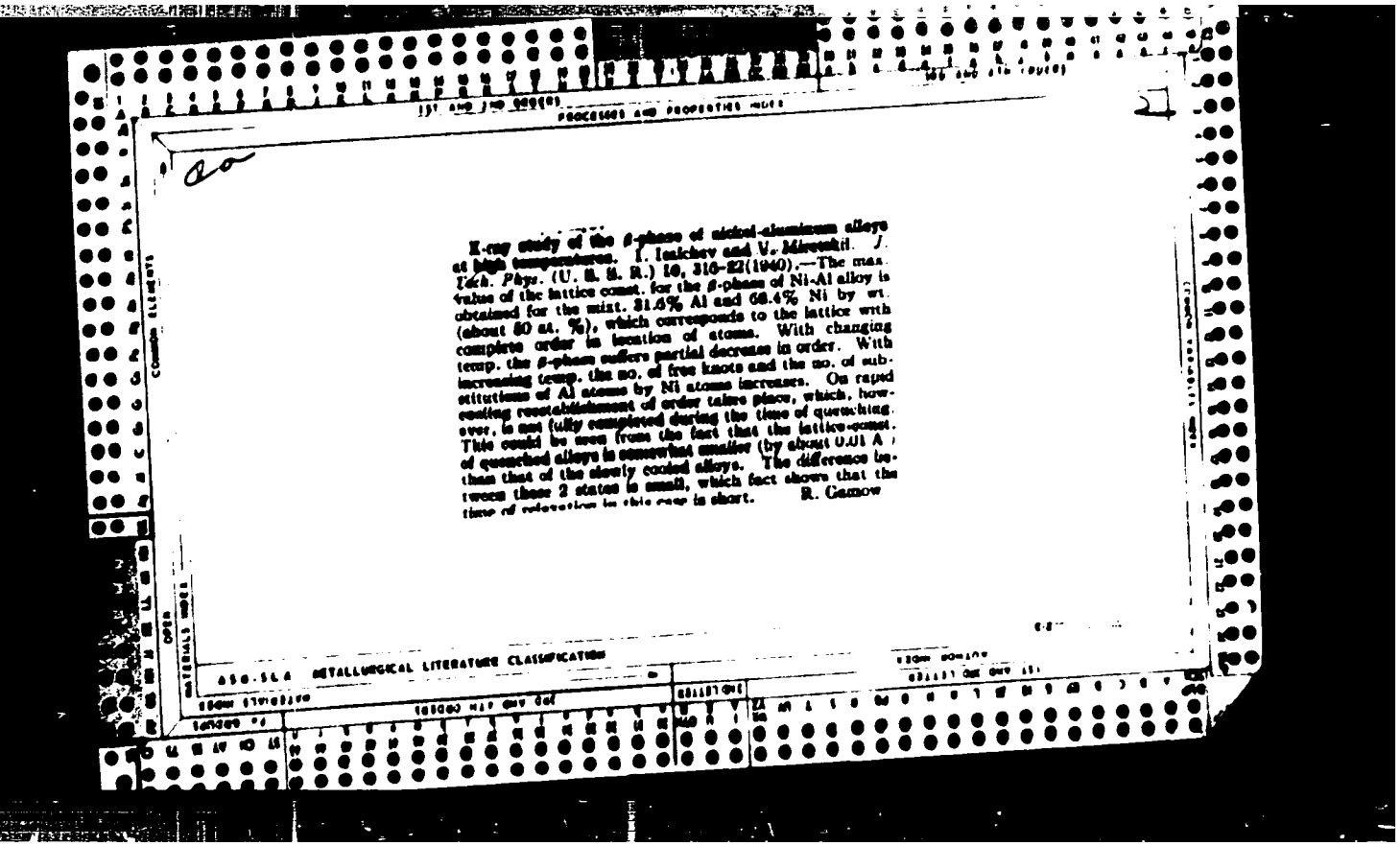


"Transformations in Eutectoid Copper Aluminium Alloys. IV. On the Reversibility of the Martensitic Transformation S, . . . G. Kurdjumov and V. Mirzkin (*J. Physics* (U.S.S.R.), 1940, 2, (2), 143-146). V. Crystal Structure of the Martensitic γ' Phase. G. Kurdjumov, V. Mirzkin, and T. Stellerkaya (*ibid.*, 1940, 2, (4-5), 297-300) [In English] See abstracts from Russian sources, *Met. Abs.*, 1940, 7, 154, 508. N. B. V.

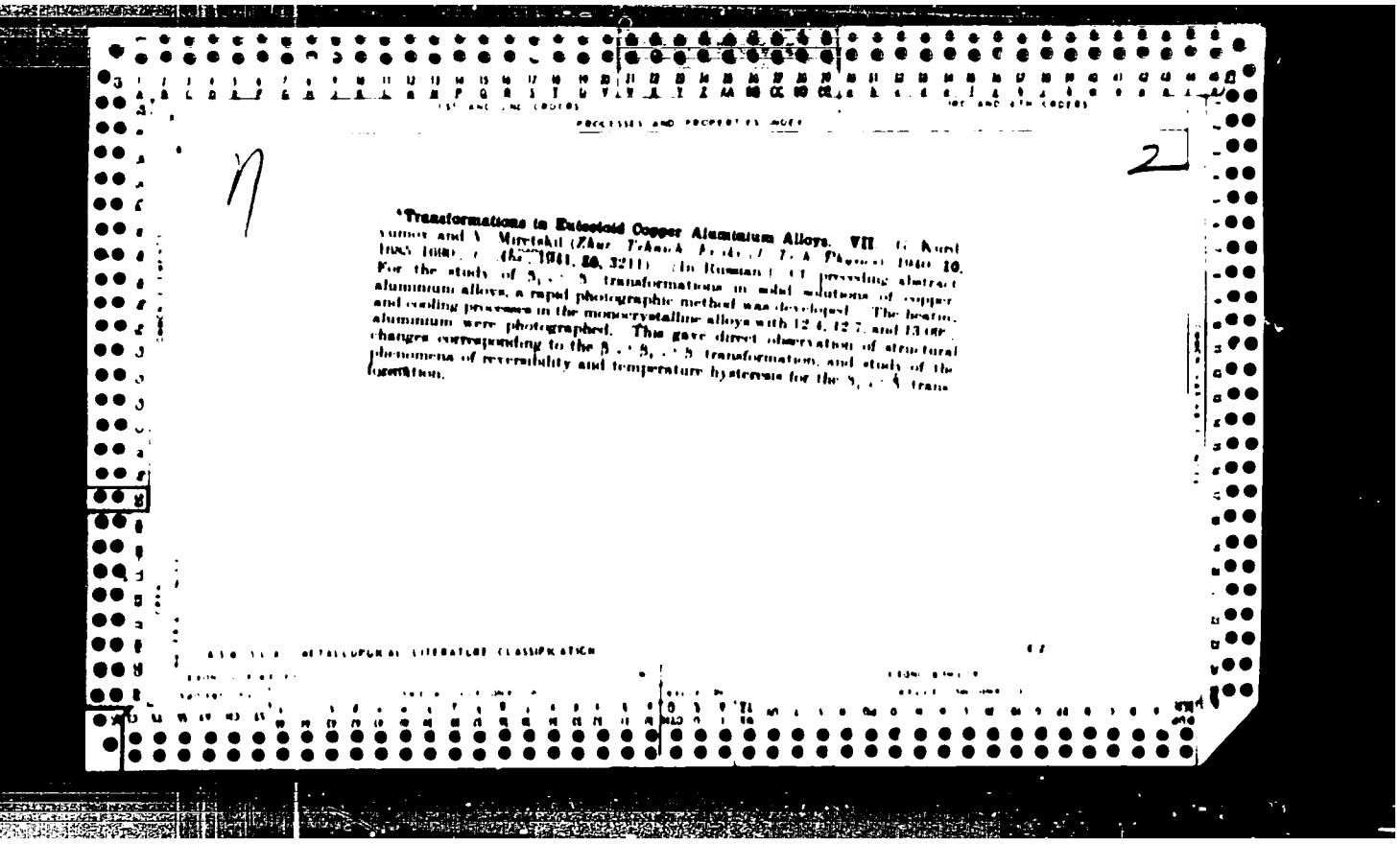


Transformations in saturated copper-aluminum alloys. V. Crystal structure of the martensite γ'-phase. G. Kurdyumov, V. M[illegible] and T. Meitlertskaya. *J. Phys. (U. S. S. R.)* 3, 397-[illegible](1940)(in English); cf. *C. A.* 34, 4716[6]; 38, 2211[4].—The x-ray polycrystal patterns of the γ'-phase (13.6% Al) show that the Cu and Al atoms are arranged in the points of a hexagonal close-packed lattice with c:a = 1.63. With the aid of a β-phase single crystal, transformed into the γ-phase on quenching, pole figures were obtained for the main planes of the γ'-lattice and the orientation of the lattice relative to the crystallographic axes of the β-crystal was detd. and may be described as $(0001)_{\gamma'}$ parallel to $(110)_\beta$, $[110]_{\gamma'}$ parallel to $[111]_\beta$. On the basis of the idea of the mechanism of martensite transformations the coördinates of the atoms of Cu and Al in the lattice were described with the aid of a rhombic lattice having 8 atoms per cell and the constants a = 4.51 A., b = 5.30 A., c = 4.22 A. The space group is V_h^{17}. The superlattice reflections found on the x-ray rotation patterns were in perfect agreement with those calcd. for a theoretically detd. lattice both in relation to the Bragg angles and to the angles between the normals to the planes and the axis of rotation. The superlattice does not possess a hexagonal symmetry; it has 3 perpendicular two-fold axes in accordance with the symmetry of the theoretical lattice.

S. M. Kaufman



X-ray study of the β-phase of nickel-aluminum alloys at high temperatures. I. Isnichev and V. Mirenskii. *J. Tech. Phys.* (U. S. S. R.) 10, 316-22(1940).—The max. value of the lattice const. for the β-phase of Ni-Al alloy is obtained for the mixt. 31.6% Al and 68.4% Ni by wt. (about 50 at. %), which corresponds to the lattice with complete order in location of atoms. With changing temp. the β-phase suffers partial decrease in order. With increasing temp. the no. of free knots and the no. of substitutions of Al atoms by Ni atoms increases. On rapid cooling reestablishment of order takes place, which, however, is not fully completed during the time of quenching. This could be seen from the fact that the lattice-const. of quenched alloys is somewhat smaller (by about 0.01 A.) than that of the slowly cooled alloys. The difference between these 2 states is small, which fact shows that the time of relaxation in this case is short. R. Gamow



PROCESSES AND PROPERTIES INDEX

2

Transformations in Eutectoid Copper Aluminium Alloys. VII (... Kurdjumov and ... Miretskii (Zhur. Tekh. Fiz., 1941, 11, 3211) [in Russian]. [Concerning] processing abstract [from] Physical Index 10.

For the study of β₁ ⇌ β transformations in metal solutions of copper-aluminium alloys, a rapid photographic method was developed. The heating and cooling processes in the monocrystalline alloys with 12.6, 12.7, and 13.0% aluminium were photographed. This gave direct observation of structural changes corresponding to the β₁ ⇌ β transformations, and study of the phenomena of reversibility and temperature hysteresis for the β₁ ⇌ β trans[formation].

METALLURGICAL LITERATURE CLASSIFICATION

MIRETSKIY V

"Transformations in Eutectoid C -Al Al cys. IV"

On the reversibility of the martensite trans-

formations $Beta_1$ ____ Gamma'.

Zhur. Phys., 143, No. 2, , 1940;

Physico-Tech. Inst., Dniepropetrovsk. c1939-.

VIRETSKIY, V.

"Transormations In Eutectoid C[illegible]-Al Alloys. 9

Crystal Structure of the Martensite Gamma-Phase

Zhur. Phys.
~~Ibid~~., 297, No. 4-5, 3, 1940

Physico-Teck. Inst., Dniepropetrovsk. c1940-.

107-5-45/54

AUTHOR: Miretskiy, V. (Kaliningrad)

TITLE: Soldering Iron Supply. Experience Exchange.
(Pitaniye nizkovol'tnogo payal'nika. Obmen opytom)

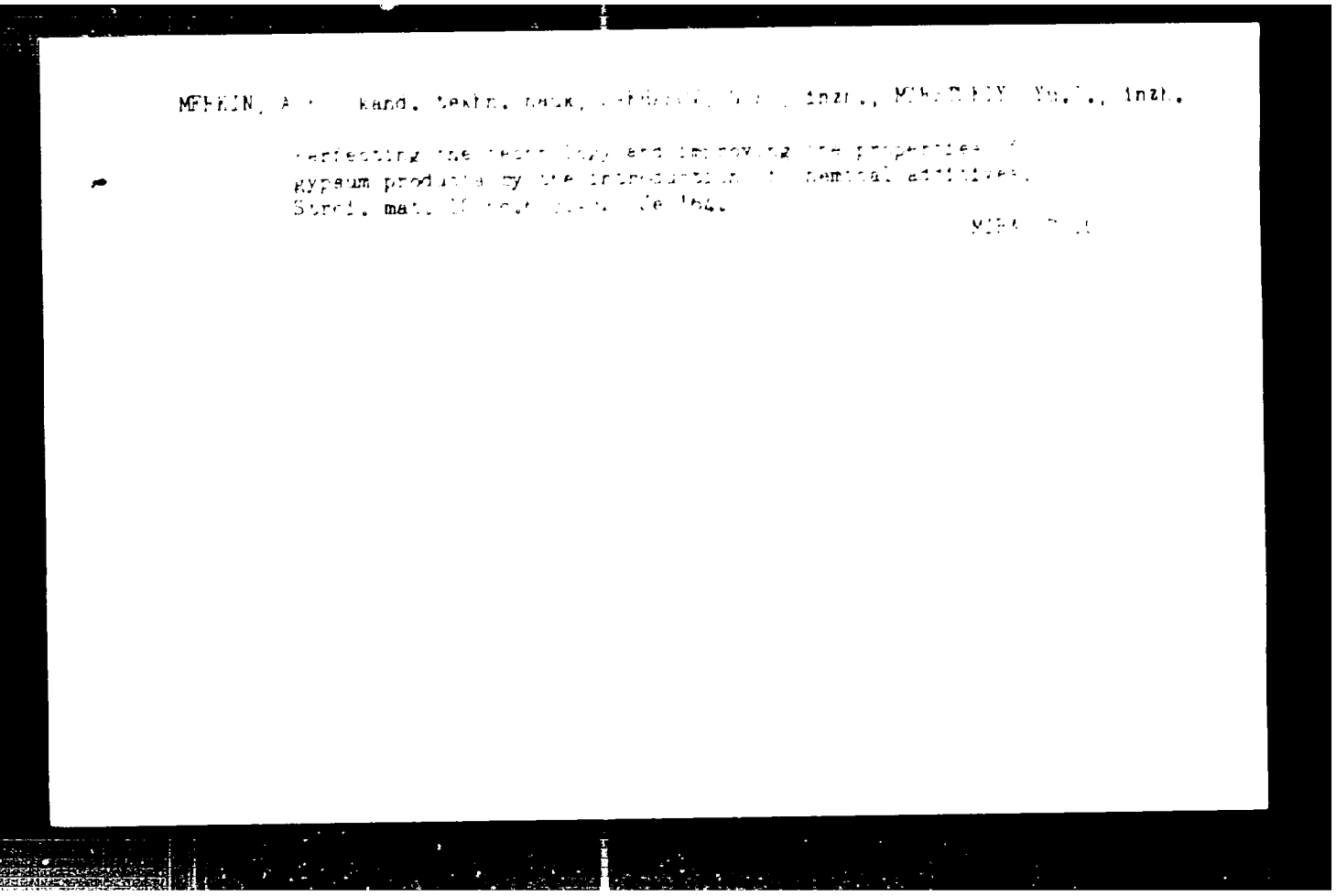
PERIODICAL: Radio, 1956, Nr5, p. 56 (USSR)

ABSTRACT: A 15-25 v, 50-60 w a-c soldering iron is usually connected to a 220-v supply by means of a transformer.

It is suggested to use a 12-16 microfarad paper capacitor instead.

AVAILABLE: Library of Congress.

Card 1/1



MEHRIN, A. [illegible] kand. tekhn. nauk, [illegible] inzh., Mekhanizatsiya [illegible] inzh.

[illegible] reflecting the [illegible] and improving the properties [illegible] gypsum products by the introduction of chemical additives. Stroi. mat. 11 no. [illegible] '64.

[illegible]

MIREV, D. DECEASED 1962/6
C: 1961

SEE ILC

CHEMISTRY

MIREVA, S.; MONEV G.

TECHNOLOGY

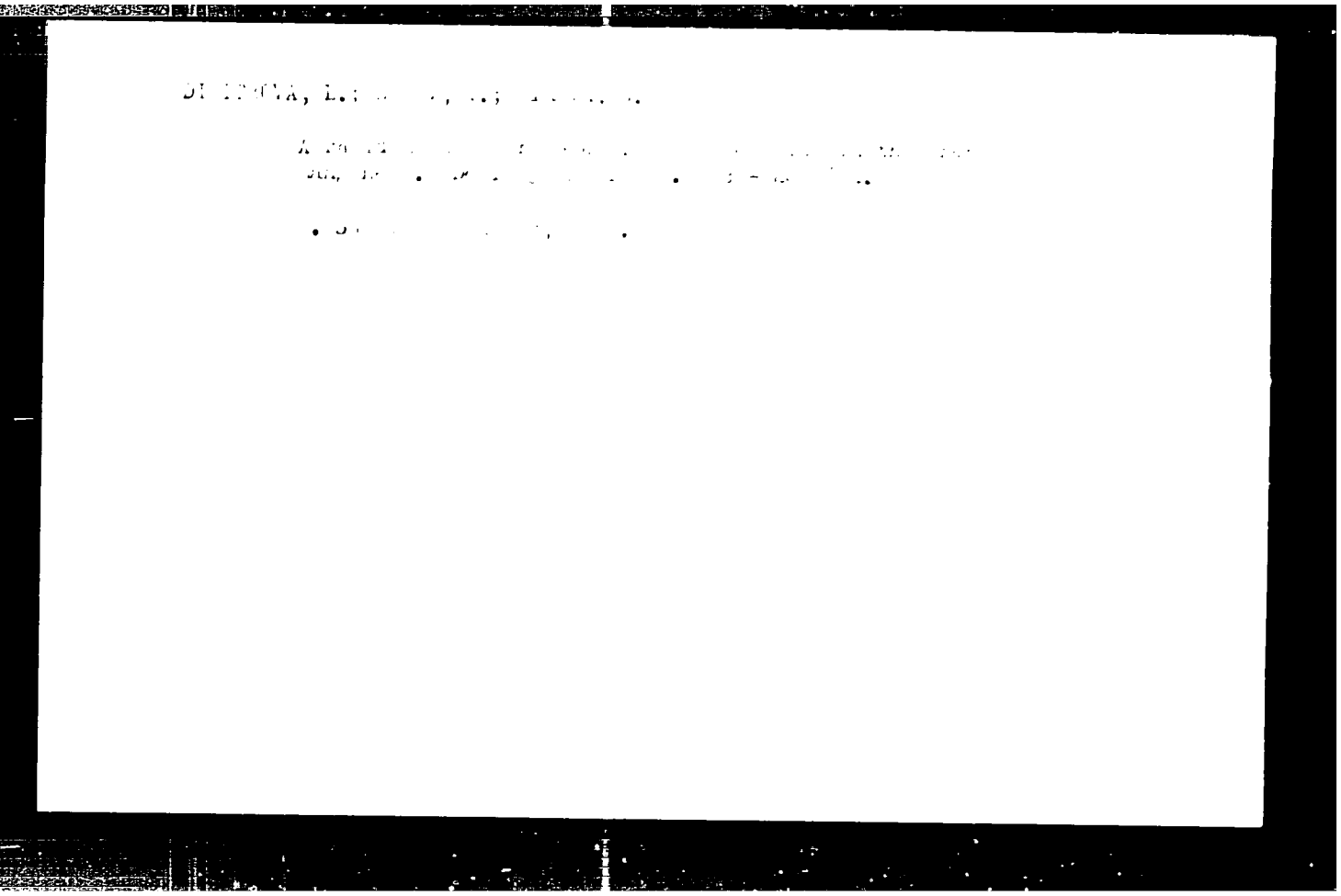
Periodical: KHIMIIA I INDUSTRIIA. Vol. 30, No. 5, 1958

MIREVA, S.; MONEV G. On the question of extracting molybdenum from poor copper molybdous concentrates and ores. p. 136.

Monthly List of East European Accession (EEAI), LC., Vol. 8, No. 2, February 1959, Unclass.

DIMITROVA, L.; MENOV, I.; MENEV, S.; VIDENOV, N.; [illegible]VA, S.

Dressing Bulgarian manganese carbonate ores with sulfur dioxide.
Godishnik Inst khim prom 2:31-41 '63.



ZOTIKOV, V.; MASLOV, N.; MIREYN, S., krupchatnik; KOFMAN, S.

Corn milling; practices of the Moscow Milling Combine No.3, Mary Flour Mill, and local flour mills. Muk.-elev. prom. 30 no.3: 11-15 Mr '64. (MIRA 17:4)

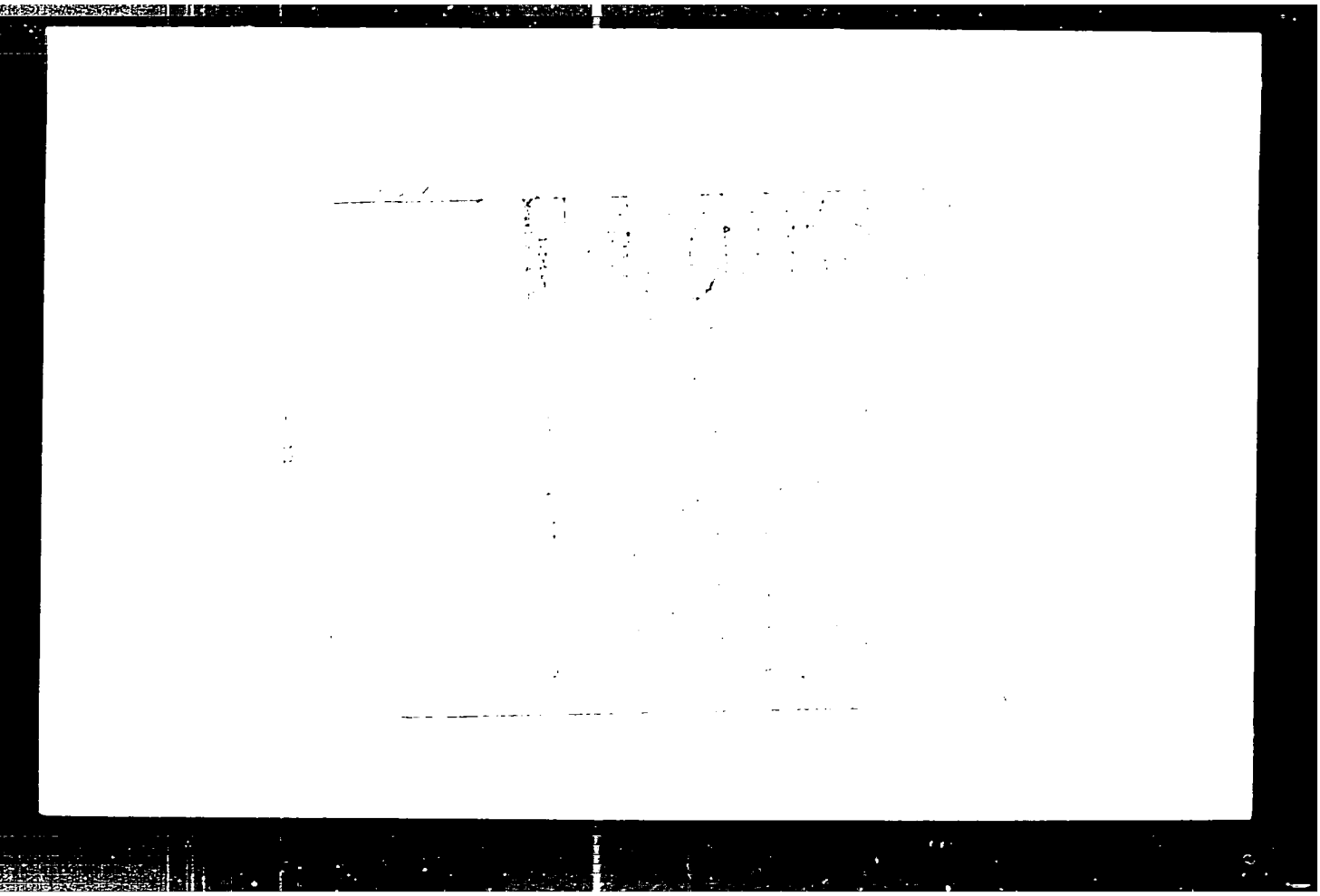
1. Glavnyy tekhnolog Moskovskogo mel'nichnogo kombinata No.3 (for Zotikov). 2. Nachal'nik eksperimental'noy mel'nitsy Moskovskogo mel'nichnogo kombinata No.3 (for Maslov). 3. Maryyskaya mel'nitsa (for Mireyn). 4. Proyektno-konstruktorskaya kontora Upravleniya pishchevoy promyshlennosti Chernomorskogo soveta narodnogo khozyaystva (for Kofman).

DIMITROVA, L.; ANDREEVA, K.; MIREVA, S.

Characterization of the waste water from dry distillation of beechwood at the Gorkhim State Industrial Enterprise, Rilski Manastir. Khim i industriia 35 no.4:127-130 '63.

POPIANKOV, B.; MIREVA, S.

Isotherms of the water-salt [illegible] system [illegible]
i industriia 36 no. 3:99-100 '64.



MIKETA, S

BULGARIA/Analytical Chemistry - Analysis of Inorganic Substances E-2

Abs Jour : Ref Zhur - Khimiya, No 4, 1958, No 10982

Author : N Isakova, S. Mireva
Inst : Not Given
Title : Volumetric Determination of Aluminum in Clays by Oxyquinoline Method Without Preliminary Silica Removal

Orig Pub : Khimiya i industriya, 1957, 29, No 4, 25-27

Abstract : The analyzed sample (0.2 g) is fused with 2 g of Na_2CO_3 or mixture of Na_2CO_3 – K_2CO_3 in a Pt crucible. The fuse is treated with water, neutralized with hydrochloric acid, a few ml of 5% [illegible] solution is added, boiled 10 min., cooled, 25 ml [illegible] total NaOH solution is added, boiled several minutes, [illegible] with water, and filtered [illegible] of the filtrate [illegible] to pH [illegible] (5 [illegible] amount in [illegible] ml [illegible], as well as 2 n. CH_3COONH_4 [illegible] precipitation discontinues) and 25 ml of 2 n. CH_3COONH_4 more. The precipitate is filtered

Card : 1/2

7

MIKHAILOV, Kh. M.

Oxidation of organic compounds. V. Oxidation-reduction reaction of furfural with formaldehyde. S. R. Rafikov and Kh. M. Mikhailov. *Izvest. Akad. Nauk Kazakh. S.S.R. Ser. Khim.* No. 7, 49–53(1953); cf. *Vestnik Akad. Nauk Kazakh. S.S.R.* No. 8, 115(1950); *C.A.* 48, 12715*f*.—A large excess of CH_2O in a crossed Cannizzaro reaction with furfural is useless, as the course of the reaction is detd. by the oxidation-reduction properties of the substances involved and not by their relative amts. The bulk of the furfuryl alc. (I) is formed within 3 hrs. and the best reaction temp. is 15–25°. The yield of pure I at a 1:1 to 1:1.5 ratio of furfural to CH_2O is 70–3%. Furfural is readily prepd. from reeds by hydrolysis with 10% HCl in the presence of NaCl with continuous steam distn.; a 9.7% yield (dry wt.) is obtained. Furfural (0.4 mole), 1.3 moles CH_2O (as a 35% soln.), and 90 ml. H_2O treated over 60 min. with 120 g. 60% NaOH gave, after a final 4 hrs. at 40–5°, 78% pure I. Oxidation of organic compounds. VI. Reaction of decomposition of benzoyl peroxide in benzene. S. R. Rafikov and V. S. Kudinova. *Ibid.* 54–69.—Decompn. of Bz_2O_2 in C_6H_6 proceeds noticeably with evolution of CO_2 at 70° or above. At low temps. there occurs a reversible decompn. with formation of Bz_2O radicals, while at higher temps. the decompn. yields Ph· radical and CO_2, the amt. of the latter rising with the temp. The main reaction products are BzOH, Ph_2, $(PhC_6H_4)_2$, and resins of the polyphenyl type, along with small amts. of Bz_2OPh_2, $Ph_2C_6H_4$, and traces of H_2. It is suggested that the decompn. in which Ph and Bz_2O radicals are formed is followed by reaction of these with the solvent to yield the above listed products. The reaction shows the characteristics of branched-chain reactions. VII. Mechanism of the catalytic oxidation of camphene, cineole, and bornyl acetate in the vapor phase. B. V. Suvorov and S. R. Rafikov. *Ibid.* 70–4.—The vapor-phase oxidation over a V catalyst of camphene and 1,8-cineole with air gave *p*-cresol, *p*-toluic and terephthalic acids, *p*-benzoquinone, CH_2O, and CO_2. Bornyl acetate gave no aromatic products or their *O*-derivs., thus indicating more rapid decompn. of the ring system. It is probable that the 1st 2 substances yield an O-bridged structure hydrating to a *p*-di-HO deriv., which is dehydrated to a diene, which then undergoes oxidation proper.

G. M. Kosolapoff

MIRFAIZOV, Kh. M., Cand Chem Sci -- (diss) "Study of canes -- Phragmites Communis Trin. -- which grow in Kazakhstan, as a raw material for the hydrolytic industry." Alma-Ata, 1960. 11 pp; (Kazakhstan State Univ im S. M. Kirov); 200 copies; price not given; (KL, 30-60, 136)

MIRFAIZOV, Kh.M.; GORYAYEV, M.I.

Investigating the hydrocarbon composition of reeds.
Gidrolиз.i lesokhim.prom. 13 no.3:4-6 '60.
(MIRA 13:7)

1. Institut khimii Akademii nauk Kazakhskoy SSR.
(Kazakhstan--Reed(Botany))
(Hydrocarbons)

MIRFAIZOV, Kh.M.; GORYAYEV, M.I.

Hydrolysis kinetics of reed hemicellulose. Gidroliz. i lesokhim. prom. 14 no.3:9-10 '61. (MIRA 14:4)

1. Institut khimicheskikh nauk AN KazSSR.
(Hemicullulose) (Hydrolysis) (Reed (Botany))

GORYAYEV M.I.; MIRFAIZOV, Kh.M.; SAMAYKINA, V.K.

Obtaining furfurole by means of the dehydration of pentose hydrolyzates on a hot surface. Gidroliz. i lesokh. prom. 18 no.4:3-4 '65. (MIRA 18:6)

1. Institut khimicheskikh nauk AN KazSSR.

L 10321-66 EWT(m)/EWP(1)/T DJ/RM

ACC NR: AP6000099 SOURCE CODE: UR/0360/65/000/002/0083/0086

AUTHOR: Goryayev, M. I.; Mirfaizov, Kh. M.; Saraykina, V. K.

ORG: None

28
B

TITLE: Method of obtaining furfural by rapid dehydration of pentose hydrolyzates in a medium of high-boiling oils

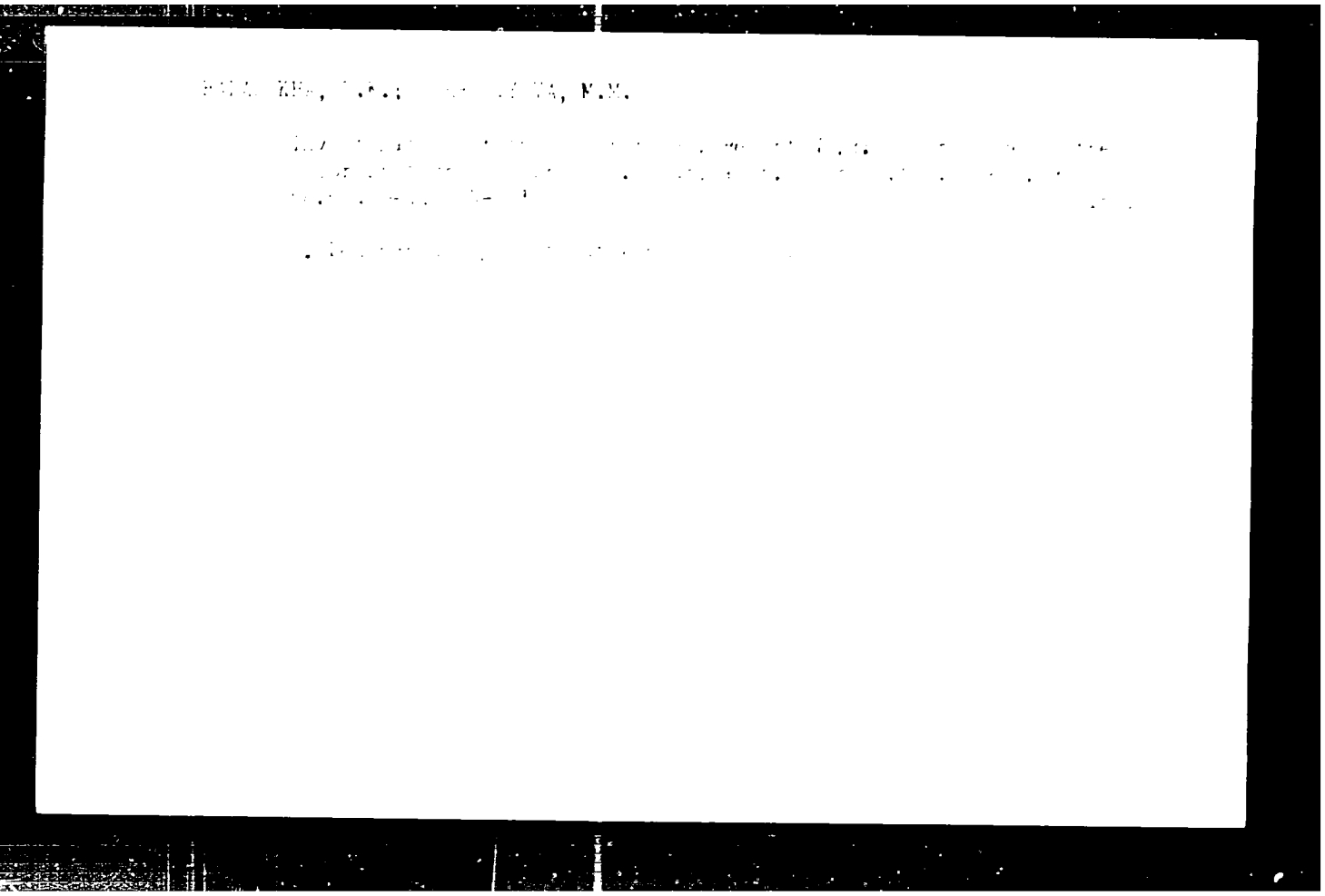
SOURCE: AN KazSSR. Izvestiya. Seriya Khimicheskikh nauk, no. 2, 1965, 83-86

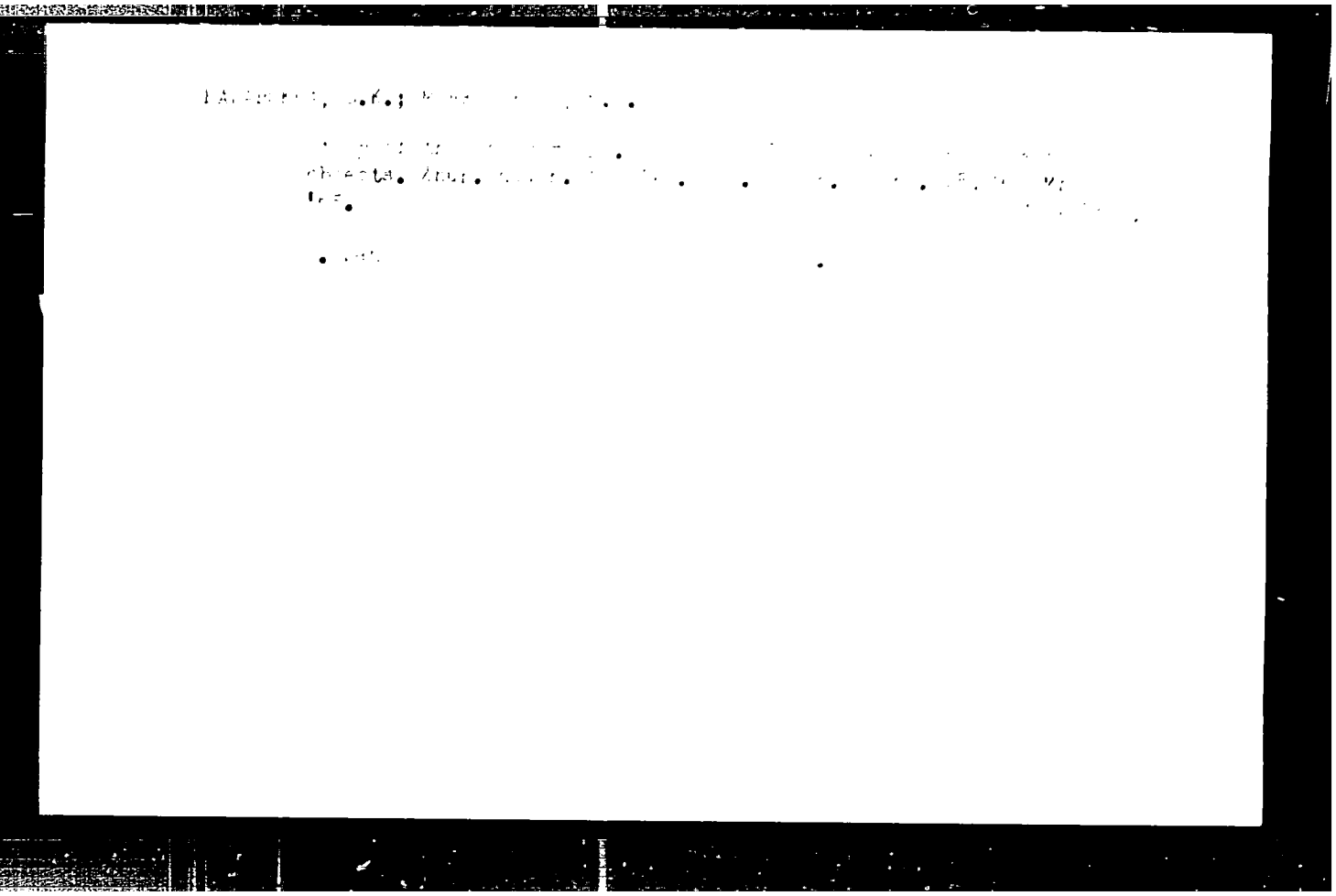
TOPIC TAGS: furfural, pentose, transformer oil, silicone lubricant

ABSTRACT: Furfural is formed by the dehydration of pentoses and uronic acids. The authors produced furfural by an accelerated dehydration of pentose hydrolyzates obtained at the Chimkent Hydrolysis Plant (Chimkentnyy gidroliznyy zavod). The reaction was carried out in transformer or silicone oil in a stream of carbon dioxide. The results showed that the yield of furfural obtained was high (51 to 70% of theoretical). In the proposed dehydration method, use may be made of pentose hydrolyzates containing up to 10—11% pentose sugars. Condensates with high furfural concentrations are obtained by dehydrating pentose hydrolyzates with a relatively high content of pentose sugars. Orig. art. has: 1 figure and 1 table.

SUB CODE: 07, 11 / SUBM DATE: 09Jan64 / ORIG REF: 002

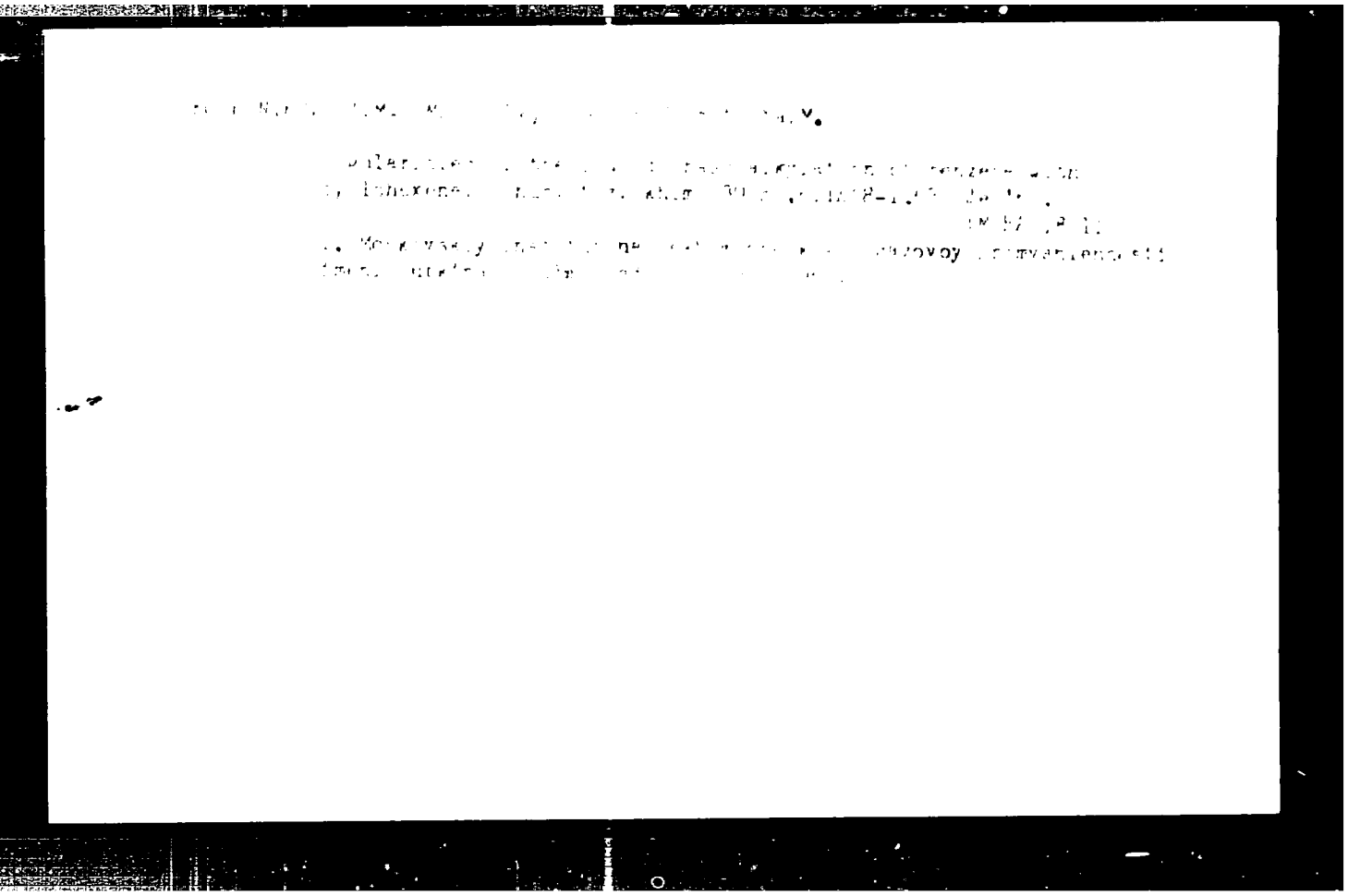
Card 1/1



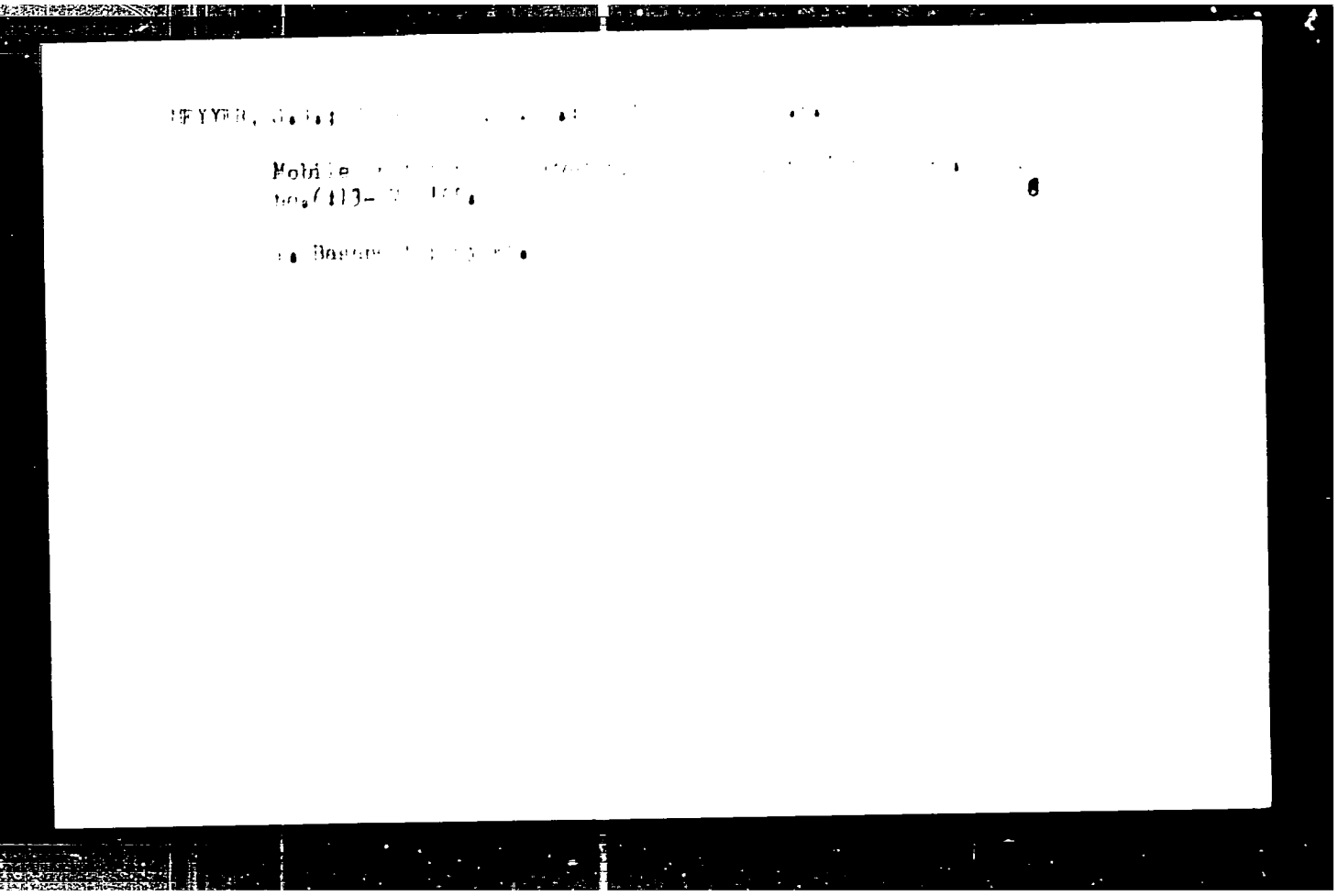


MIRGALE.'EV, A. [Migaleyev, A.]

Collective forms of work organizati n. Prom-sty [illegible]
33 Jl '64.



MIKALUYEV, A.



38703

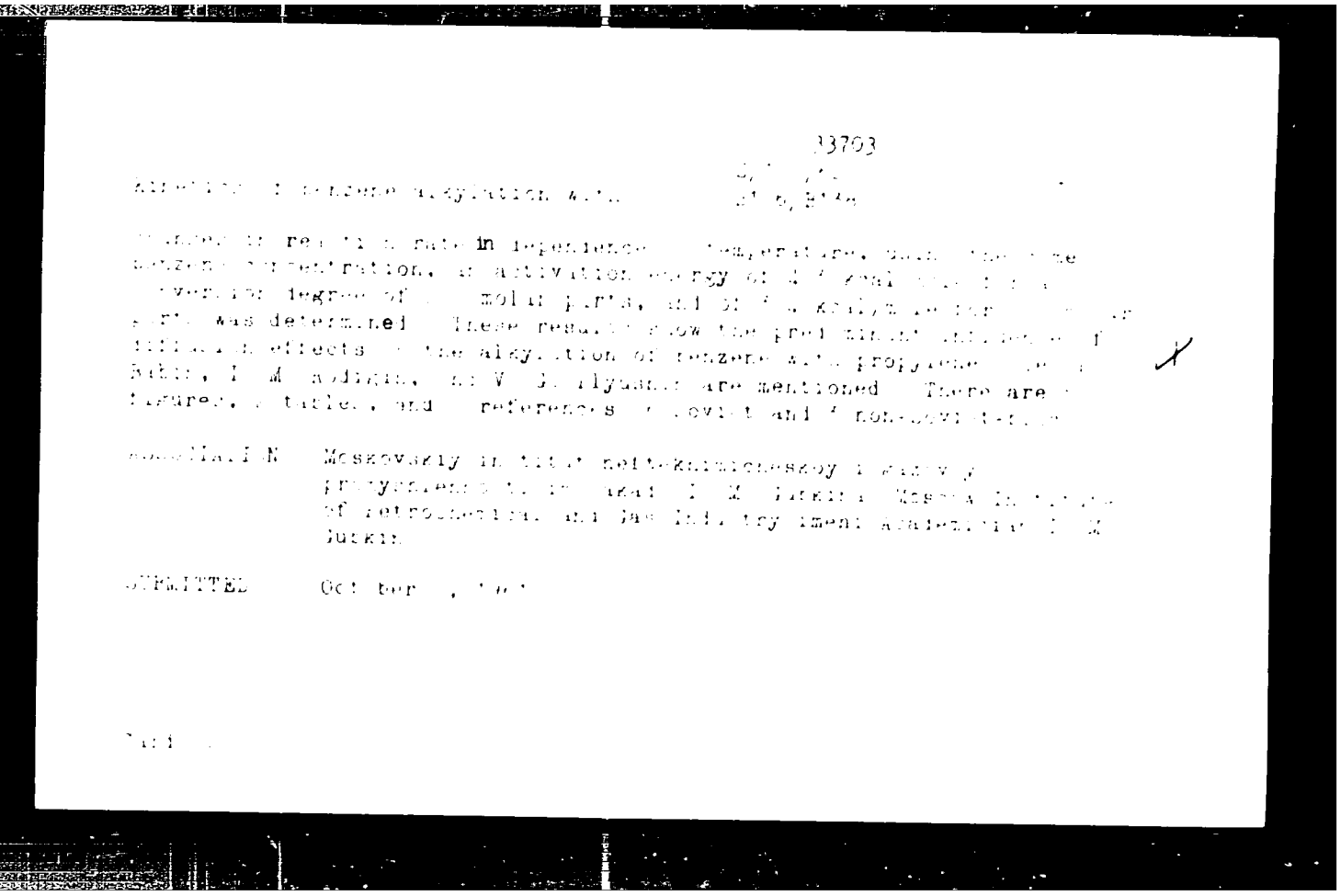
53300

AUTH: [illegible] Kaushkin, Yu. N., Mikhaylov, I. [illegible]

TITL: Kinetics of [illegible] of benzene with propylene in the presence of some physical factors

SOURCE: Izvestiya vysshikh uchebnykh zavedeniy. Neft' i gaz, [illegible]

TEXT: Alkylation of benzene with propylene in the liquid phase was carried out to ascertain whether diffusion effects, such as the physical process of gas decomposition, can retard the reaction rate. The [illegible] thermostatic reactor used for the tests was adapted for sampling during the reaction. Aluminum chloride was used as a catalyst. It was found that a feed ratio of propylene from [illegible] mole per mole of benzene per hour accelerated the reaction considerably. At the [illegible] the same effect as the concentration of dissolved propylene reaching equilibrium. Acceleration of stirring from [illegible] to [illegible] rpm also accelerates the reaction, but further increase of the speed no more has the effect. The optimum quantity of catalyst is [illegible] by determining the [illegible]



33703

[illegible] benzene sulfonation [illegible]

[illegible] results in dependence [illegible] benzene sulfonation, an activation energy of [illegible] kcal/mole, and an overall degree of [illegible] molar parts, and [illegible] was determined. These results show the practical influence of [illegible] effects in the alkylation of benzene with propylene [illegible] Nabit, I. M. Koltun, and V. I. Klyuzhev are mentioned. There are [illegible] figures, 2 tables, and [illegible] references, 7 Soviet and 2 non-Soviet.

[illegible] Moskovskiy neftekhimicheskiy tekhnikum

[illegible] Institut Khimii Vysokomolekulyarnykh Soyedineniy Akademii Nauk Uzbekskoy SSR

SUBMITTED October [illegible]

Card [illegible]

PAUSHKIN, Ya.M.; MIRGALEYEV, I.G.

Alkylation of α - chloroethylbenzene with propylene. Neftekhimiia 2 no.5:784-787 S-O '62. (MIRA 16:1)

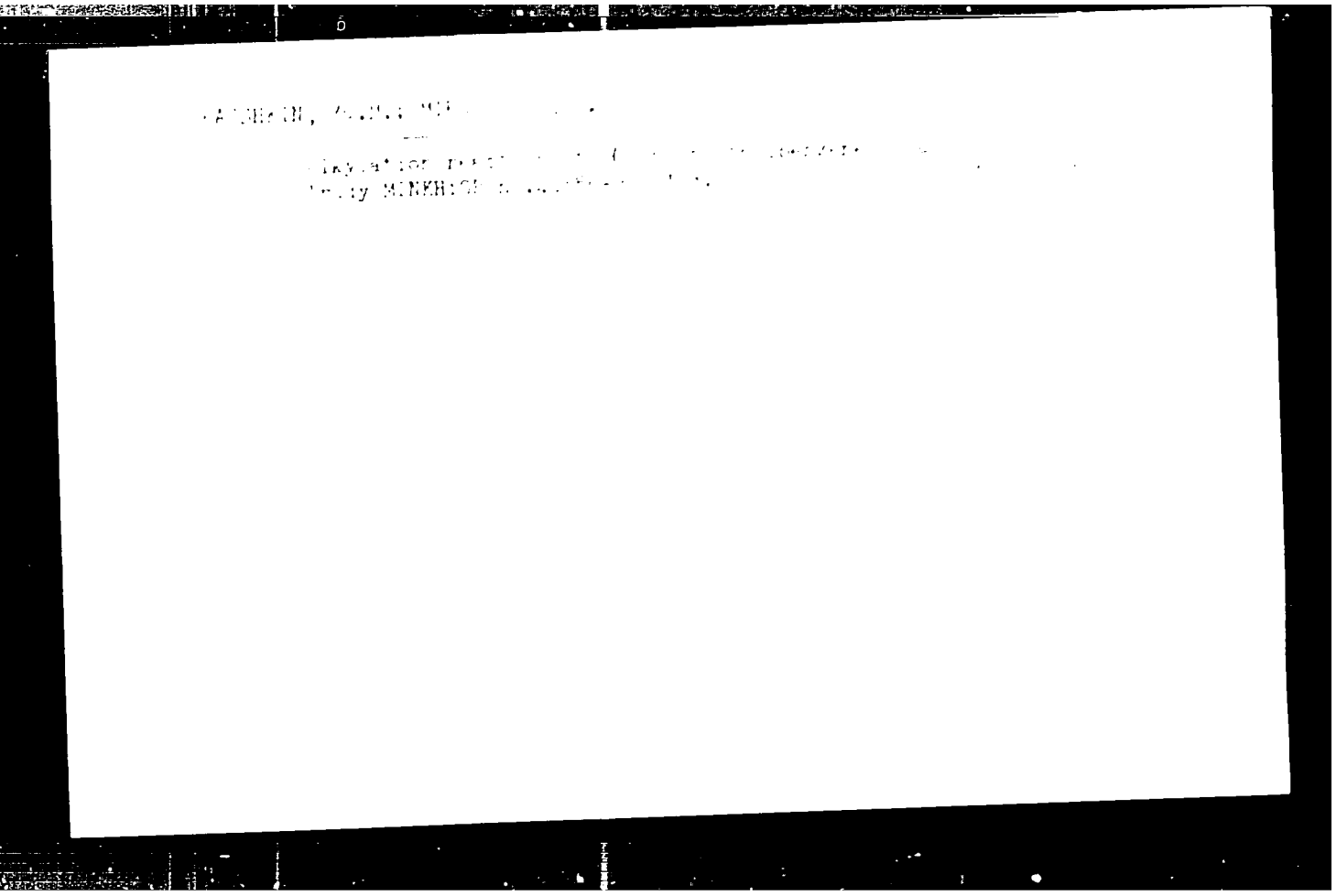
1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti imeni I.M.Gubkina.

(Benzene) (Propene)

Zhuko..., Yu.M.; Mirgaleyev, I.G.; PAUSHKIN, Ya.M.

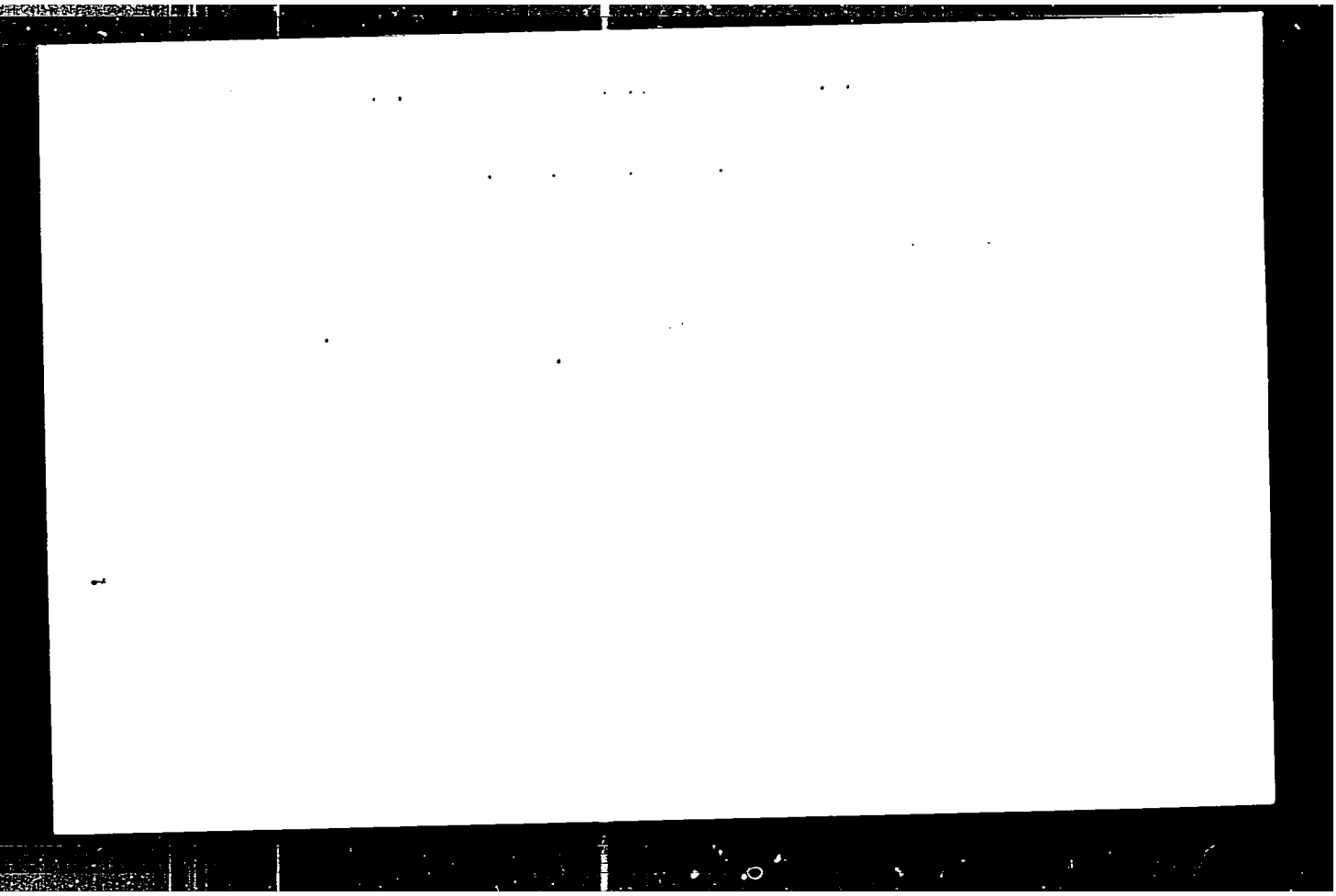
Kinetics of catalytic hydrochlorination of styrene. Neftekhimiia 3 no.3:399-404 My-Je '63. [illegible]

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti imeni I.M. Gubkina.
(Styrene) (Hydrochloric acid)



KOLESNIKOV, I. M.; MIRGALEYEV, I. G.; PA'SHKIN, Ya. M.

Kinetics of the gas-liquid alkylation of benzol by propylene and butylene. Khim prom no. 3:174-179 Mr '64. (MIRA 17:5)



ACC NR: AP6032841 (A, N) SOURCE CODE: UR/0065/66/000/010/0001/0005

AUTHOR: Kolesnikov, I. M.; Mirgaleyev, I. G.; Paushkin, Ya. M.

ORG: MINKh; GP

TITLE: Alkylation of benzene with propylene by means of a silica-alumina catalyst promoted with boron trifluoride

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 10, 1966, 1-5

TOPIC TAGS: alkyl benzene, aromatic hydrocarbon, alkylation, petroleum product

ABSTRACT: Alkylation of benzene with propylene was studied by percolating gaseous propylene (0.5-1.5 mol/l) at 25-75°C for 0-120 min through a glass column (28 mm in diameter and 650 mm high) containing 226 g of catalyst (silica-alumina promoted with 15.5-18.1 wt % BF_3) and 156 g of benzene. The object of the work was to define optimal alkylation conditions. It was found that the yield of the alkylbenzenes was directly proportional to the BF_3 content in the catalyst. It was concluded that the BF_3 was present in two forms: physically absorbed on the silica-alumina surface and as a strong coordination compound with aluminum. Increase in the temperature was found to have a rather slight effect on the yields of both mono- and di-propylbenzenes. The content of di- and poly-propylbenzenes in the reaction product was found to be proportional to the molar ratio of propylene to benzene used. The catalyst activity was found to de-

Card 1/2 UDC: 66.095.25:547.532

ACC NR: AP6032841

cline with the alkylation duration. This decline in catalyst activity became increasingly pronounced in proportion to the rise in alkylation temperature. The maximum yield of propylbenzene was 98% (based on propylene). Orig. art. has: 4 figures, 5 tables.

SUB CODE: 07/ SUBM DATE: none/ ORIG REF: 001/ OTH REF: 001

Card 2/2

MIKALL... 137-58-4-[illegible]

Translation from: Referativnyy zhurnal Metallurgiya, 1958, Nr 4, p 94 (USSR)

AUTHORS: Petrov, D A , Mirgalovskaya, E M , Strel'nikova, I A , Komova, E M

TITLE: Producing Single Crystals of AlSb and Study of Their Properties (Poluchenye monokristallov AlSb i izucheniye ikh svoystv)

PERIODICAL: V sb Vopr metallurgii i fiz poluprovodnikov Moscow, AN SSSR, 1957, pp 70-79

ABSTRACT: The conditions for producing single crystals of AlSb and the electrical properties thereof were studied Special features of the synthesis of this compound are described It is established that single-phase bars may be obtained if 0 29 percent excess of Al be used (18 42 weight percent) The starting materials Sb SU-0 and Al AB-000 were purified by floating-zone recrystallization, subsequent to which the content of Fe, Cu, B, Pb, Al, Ca, and Sn in the Sb diminished to about 10^{-3} percent while that of As diminished to over 10^{-3} percent and the Fe, Mg, Zn, Si in the Al diminished to $\sim 10^{-4}$ percent Single crystals of AlSb derived by extraction from the melt in an atmosphere of purified Ar were of the p-type An excess of Sb and Al did not change the

Card 1/3

Producing Single Crystals of Si and Study of Their Properties

type of conductivity. When it was desired to obtain single crystals of the n-type Se or Te was added to the charge. Volt-ampere characteristics curves for the n- and p-type materials produced are presented, as are photographs of the specimens. The rectification factor was 10 000, sometimes attaining 16 000 units; the Hall mobility was 1200 cm²/v sec; the number of holes ran 1.2×10^{18} cm^{-3}. The low resistivity (ρ 0.03-0.04 ohm cm) and the small inverse voltage of 3-4 v (sometimes 1 v) indicates the presence of a considerable quantity of uncontrolled impurities. Redrawing did not improve results. Zone recrystallization of the compound formed in an apparatus with a HF heater in an Ar atmosphere proved to be an effective method of further purification. Multicrystalline specimens 70-80 mm long and 7 mm in diameter with resistivities of 70-200 ohm cm at the head end of the bar were obtained. When resistivity was about 200 ohm cm, the cold immobility was found to be 178 cm²/v sec, and the number of holes to be 1.75×10^{14} cm^{-3}. An attempt was made to obtain a p-n junction by doping p-material from the melt and also by the fusing together of Te and Pb, Cd and Fe, Sn and Fe. The results were p-n junctions with a rectification factor of 50 at 4 v and inverse voltage of 4-8 v. Specimens of the n- and p-types with resistivities ρ 0.1 ohm cm were used to make point-contact diodes having rectification factors of 70-200 units. A volt-ampere characteristic curve of the diode is

Producing Single Crystals of AlSb and Study of Their Properties

its temperature dependence is presented. When heated from 18 to
nitude of A inverse p for U inverse p is varied from 10 to 60

single crystals--production
crystals--study and temperature

Card 3 3

MIRGALOVSKAYA, M.S.; MAKAROV, Ye.S.

Crystalline structure and properties of S phase in the Al - Cu - Mg system. Izv. Sekt. fiz. khim. anal. 18:117-127 '49. (MIRA 11:4)

1. Institut obshchey i neorganicheskoy khimii im. N.S. Kurnakova AN SSSR.

(Aluminum) (Copper) (Magnesium)

MIRGALOVSKAYA, M. S.

3

"Q Phase of the System Aluminium-Copper-Magnesium," M. S. Mirgalovskaya (*Doklady Akad. Nauk S.S.S.R.*, 1951, 77, (2), 285–287).—[In Russian]. In a previous investigation (Urazov and M., *Referaty Nauchno Issled. Rabot. Otd. Khim. Nauk Akad. Nauk S.S.S.R.*, 1944, 24), a new intermetallic phase was observed and designated *Q*. It greatly resembles the *U* and *T* phases, not only in crystal form but also in its behaviour towards the usual etchants. Using alloys annealed at 400° C. for 15 days and air-cooled, M. has now established the extents of the phase fields by microscopy. The solid-soln. region of the *Q* phase is very small (~1·5%). A Thomson bridge was used for elect.-resist. measurements on alloys along the section *U*–βAl Mg at 18° and 100° C. The temp. coeff. of elect. resistance/compn. (at % Al) curve for these alloys shows a singular max. at the compn. Al 35·5, Cu 30·8, Mg 27·7% (corresponding almost to $Al_2Cu_2Mg_6$), indicating that the *Q* phase is intermetallic. An *X*-ray study of the almost single-phase alloy of compn. Al 36·5, Mg 27·2, Cu 36·3% shows that the *Q* phase has a b.c.c. lattice ($a = 12·087$ Å.); the space group is of class T^h-$m3$ or O^h-$m3m$. The number of atoms in the unit cell, calculated from the observed sp. gr. (3·022 at 25° C.), is 94; i.e. it contains 8 $Al_2Cu_2Mg_6$ groups.—O. V. E. T.

Evaluation
B-78524

MIRGALOVSKAYA, M.S.

3

*Region of Primary Crystallization of the Q-Phase of the System Aluminium–Copper–Magnesium. M. S. Mirgalovskaya (*Dokiady Akad. Nauk S.S.S.R.*, 1951, 77, (6), 1027–1030). — [In Russian]. M. investigated the nature of the processes in which the *Q* phase (see preceding abstract) participates, by the microscopical examination and thermal analysis of ~60 alloys. Because of the difficulty in distinguishing the *Q* phase from the *U* and *T* phases, the following etchants were used: 27% HNO_3 + 7% HF, 0·5% HF + 1·5% HCl + 2·5% HNO_3, and 25% HNO_3 + 0·5% HF. With the first etchant, the centres of the grains of the *T* phase were tinted more darkly than their external layers. The phenomena observed by Urazov, M., and Nagorskaya (*Izvest. Sekt. Fiziko-Khim. Anal.*, 1949, 19, 523) are the result of a typical peritectic transformation of the darker *Q* phase into phase *T*. The *Q* phase takes part in the following invariant processes: liquid + *U* + *S* → *Q* (520° C.; Al 51·1, Cu 15·0, Mg 34·0%); liquid + *Q* → *S* + *T* (472° C.; Al ~61·6, Cu 12·5, Mg 26·0%); liquid + *U* → *Q* + *δ* (~435° C.; Al ~27·8, Cu 6·2, Mg 66·0%); liquid + *T* → *γ* + *Q* (~430° C.; Al ~32·2, Cu 6·2, Mg 61·6%); liquid → *γ* + *δ* + *Q* (425° C.; Al 31·0, Cu 6·0, Mg 63·0%). The liquidus diagram for the region studied is given.—G. V. E. T.

CA

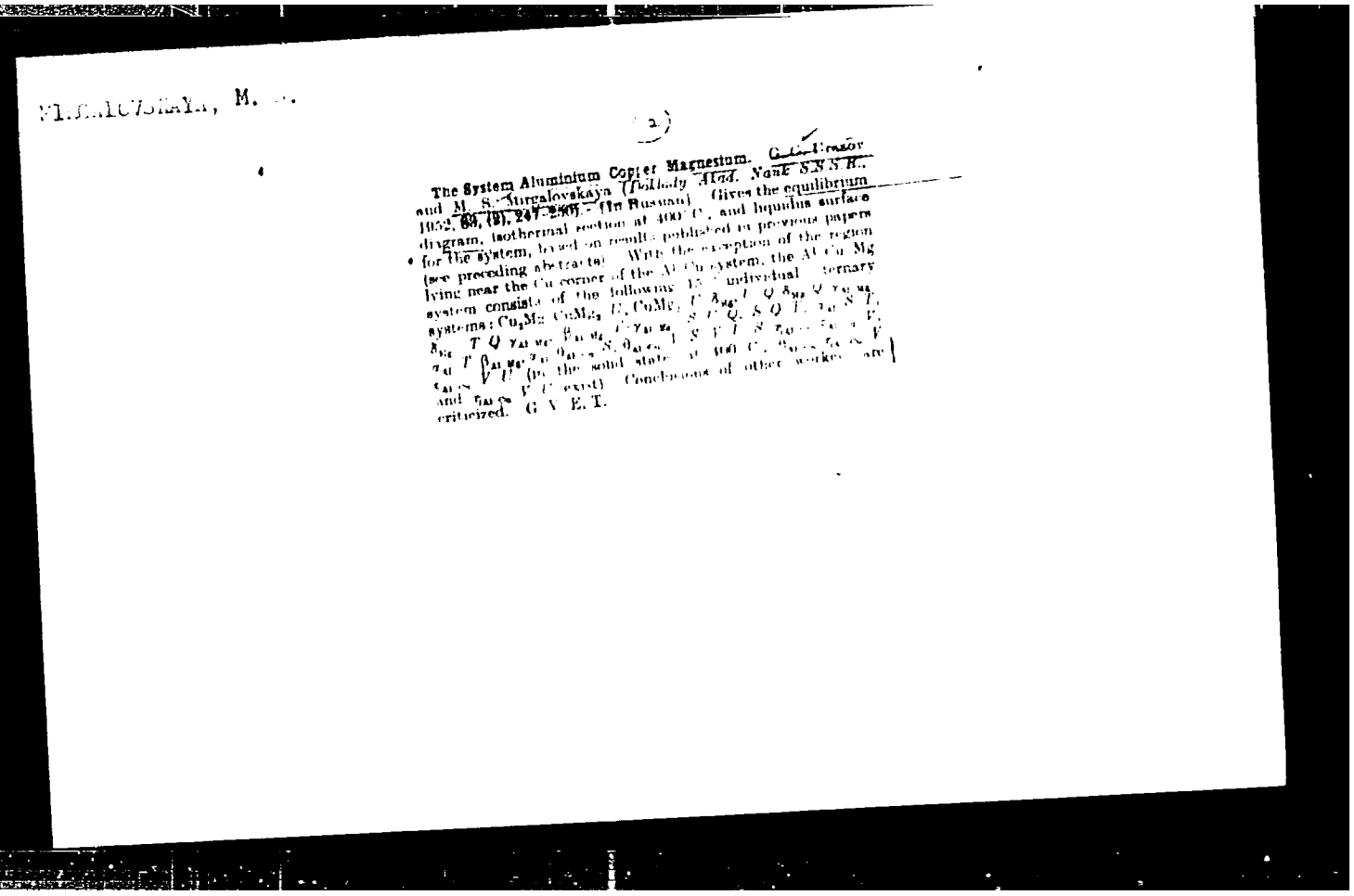
A crystallochemical peculiarity in the systems Mg Zn and Mg AlCu M. S. Mirgalovskaya *Doklady Akad Nauk S.S.S.R.* 78, 909-11(1951).— A theoretical analysis is made of the compds. that occur in the two systems. Of the three compds. $MgZn_2$, $MgZn_5$, and $MgZn_6$ that occur in the Mg-Zn system, the last two are correlated with the compds $MgAlCu$ and $Mg_5Al_6Cu_6$ in the Mg-AlCu section through the Mg-Al-Cu ternary system. The third corresponding compd., Mg_5AlCu_2, may also exist. A. G. Guy

Inst. Gen. & Inorganic Chem. im. Kurnakov, AS USSR

MIKHAILOVSKA, . . .

MIKHAILOVSKA, M. . . - "Investigation of the Triple Intermetallic Phases of the System: Aluminum, Copper, Magnesium." Sub 16 Jun 52, Inst of General and Inorganic Chemistry imeni N. S. Kurnakov. (Dissertation for the Degree of Candidate in Chemical Sciences).

So: Vechernaya Moskva January-December 19..



M.[illegible]

2)

The System Aluminium Copper Magnesium. G. V. Ivanov and M. S. Mirgalovskaya (*Doklady Akad. Nauk S.S.S.R.*, 1952, **84**, (2), 247–250). (In Russian) Gives the equilibrium diagram, isothermal section at 400° C., and liquidus surface for the system, based on results published in previous papers (see preceding abstracts). With the exception of the region lying near the Cu corner of the Al–Cu system, the Al–Cu–Mg system consists of the following 15 individual ternary systems: Cu_2Mg–$CuMg_2$–Cu, $CuMg$–$CuMg_2$–Cu, [illegible] δ_{Mg}–T–Q–$\gamma_{Al\,Mg}$–$\beta_{Al\,Mg}$–γ_{Al}–S–$\theta_{Al\,Cu}$–γ_{Al}–T–$\beta_{Al\,Mg}$–γ_{Al}–$\theta_{Al\,Cu}$–$\gamma_{Al\,Cu}$–V–$\gamma_{Al\,Cu}$–$\gamma_{Al\,Cu}$–V (in the solid state at 400° C. $\gamma_{Al\,Cu}$, $\gamma_{Al\,Cu}$ and $\gamma_{Al\,Cu}$ exist). Conclusions of other workers are criticized. G. V. E. T.

SOV/137-58-7-14719

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 7, p 19 (USSR)

AUTHORS: Mirgalovskaya, M.S., Matkova, L.I., Strel'nikova, I.A., Komova, E.M.

TITLE: Production of Single Crystals of InSb and AlSb and Study of the Properties Thereof (Polucheniye monokristallov InSb i AlSb i izucheniye ikh svoystv)

PERIODICAL: Tr. 1-y Mezhvuzovsk. konferentsii po sovrem. tekhn. dielektrikov i poluprovodnikov. 1956 g. Leningrad, 1957, pp 163-169

ABSTRACT: A description is offered of a method of producing single crystals of the semiconducting chemical compounds InSb and AlSb. The single crystals were obtained by pulling in an inert gas atmosphere. The fact that the rods consisted of single crystals was determined visually by cleavage and by Laue diffraction pattern of the cleavage plane. Production of single crystals of InSb involved no particular difficulties. The InSb was purified by re-pulling. The resistance of the samples obtained was 0.01-0.014 ohm·cm, and the mobility of the holes was $2.1 \cdot 10^3$ cm^2/v sec. The InSb compound has no rectifying

Card 1/2

Production of Single Crystals of InSb and AlSb (cont.)

effect. Production of single crystals of AlSb by pulling from a melt is difficult, as an excess of >0.29% Al in the mix over the stoichiometric ratio leads to the formation of a second phase, and this speeded the corrosion of the compound in air. To produce a single-phase compound, it is necessary to hold it for a long time at high temperatures and to stir the melt. The single crystals of AlSb produced have p-type conductivity. The resistivity of the specimens is 0.03-0.4 ohm·cm, the reverse voltage is 3-4 v, attaining 12 v in individual samples, the rectification factor is 1600, the mobility of the holes 127 cm^2/v sec at $n_g = 1.2 \cdot 10^{18}$ cm^{-3}. When the compounds are purified by controlled recrystallization, the electrical resistivity of the specimens declines at the first passes, but increases in subsequent ones. The resistivity of the initial InSb polycrystal of InSb is 0.014 ohm·cm. The single crystal from the first pulling has a resistivity of 0.0008 ohm·cm, and a single crystal pulled twice has a resistance of 0.01-0.114 ohm·cm. The pulling rate is ~1.0 mm/min, the rotation of the crucible being a few revolutions per min. It was established that excess of a component over the stoichiometric ratio does not change the type of conductivity of these compounds. It is found that floating-zone refining of AlSb makes it possible to increase the resistivity of the specimens (to 20-200 ohm·cm) and to reduce the number of carriers by $\sim 1.75 \cdot 10^{14}$ cm^{-3}.

Card 2/2 1. Single crystals--Production 2. Single crystals--Properties

V.Kh.

SOV/137-57-11-22227

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 11, p 223 (USSR)

AUTHORS: Petrov, D.A., Mirgalovskaya, M.S., Strel'nikova, I.A., Komova, E.M.

TITLE: Phase Diagram of the Mg-Mn System (Diagramma sostoyaniya sistemy Mg-Mn)

PERIODICAL: Tr. In-ta metallurgii AN SSSR, 1957, Nr 1, pp 142-143

ABSTRACT: Alloys containing up to ~ 5% Mn were investigated. The solubility of Mn in liquid Mg was determined by thermal analysis and by the thermostatic method; at 850, 790, 760, 710, and 670°C it is equal to 4.95; 3.83, 3.11; 2.58; and 2.10% Mn, respectively. The solubility of Mn in solid Mg was determined by the methods of microstructural analysis and the measurement of microhardness; at 300, 400, 500, 550, 600, and 630° it is equal to 0.1; 0.24, 0.7; 0.9; 1.6; and 2.0% Mn, respectively. The nonvariant three-phase reaction at 653° was established to be a peritectic one. The point of nonvariance is placed at 2.0% Mn. The solubility of Mn in Mg at 653° amounts to 2.3%

Card 1/1

L. V.

Translation from: Referativnyy zhurnal, Metallurgiya [illegible] USSR.

AUTHORS: Petrov, D. A., Mirgalovskaya, M. S., Strelenko, A. I. A., Komova, E. M. [illegible]

TITLE: Phase Diagram of the Magnesium Area in the Mg-Mn-Ce System (Diagramma sostoyaniya magnivevogo ugla sistemy Mg-Mn-Ce)

PERIODICAL: Tr. In-ta metallurgii AN SSSR [illegible], Nr. [illegible], pp. 144-147

ABSTRACT: Corundum crucibles were used in the melting of Mg alloys which were composed of (in percent): Fe 0.04, Si 0.05, Al 0.009, Cu 0.008 and Ce [illegible]. metals and Mn in the form of an anhydrous, high purity [illegible] chlor[illegible]. Alloys from the area of primary separation of α-Mg were annealed at 300-600° [illegible] investigated by means of thermal structure methods. In alloys from the zone of primary crystallization of Mn, the solubility of Mn in the presence of Ce as a function of temperature was determined by [illegible] mono-variant curve, anhydrous, [illegible] was introduced into the molten Mg at a temperature of 850°

Card 1/3

Phase Diagram of the Magnesium Area [illegible] Mg-Mn-Ce System

after [illegible] and the melt was stirred and permitted to cool slowly. The upper section of the ingot was subjected to a chemical as well as a thermal analysis. The Mg area of the system contains three mono-variant curves of the following three-phase equilibriums: L + Mg + Mn, L + Mg + $CeMg_9$, L + Mn + $CeMg_9$. (where "L" stands for the liquid phase, Transl Note). When the Ce content is changed from 0 to 1.5 percent, the solubility of Mn is reduced from 5 to 3.8 percent at a temperature of 850°. with 12 percent Ce the solubility of Mn is 3.4 percent. In the presence of Mn the solubility of Ce in α Mg is somewhat reduced, whereas the solubility of Mn in α Mg, in the presence of Ce remains practically unaltered. [illegible] maximum saturation of α [illegible] and 1.3% Mn. The line of the equilibrium of L [illegible] Mg-Mn originates at 2.0 percent Mn on the Mg-Mn side, and approaches the Mg-Ce side terminating at the point corresponding to 1.4 percent Mn, and 585°. Up to the point 97.7 percent Mg 2.0 percent Mn, and 0.3 percent Ce the line describes the peritectic process $L + Mn \rightleftharpoons Mg$, whereas beyond this point it describes the eutectic process $L \rightleftharpoons Mn + Mg$. The line $L \rightleftharpoons Mg + CeMg_9$

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Phase Diagram of the Magnesium Area in the Mg-Mn-Ce System

originates in the point which corresponds to 21 percent Ce and 590°. The curve terminates in the eutectic triple point

1. Magnesium alloys-Chemical analysis 2. Magnesium alloys-Thermal analysis 3. Magnesium alloys-Phase studies

Card 3/3

137-58-3-5832

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 3, p 194 (USSR)

AUTHORS: Mirgalovskaya, M. S., Strel'nikova, I. A.

TITLE: An Investigation of the Mn-Ce System (Issledovaniye sistemy Mn-Ce)

PERIODICAL: Tr. In-ta metallurgii AN SSSR, 1957, Nr 2, pp 135-138

ABSTRACT: The phase diagram of the Mn-Ce system was plotted from data obtained by thermal analysis and microstructural studies. The alloying of electrolytic Mn (0.04 percent Fe, 0.01 percent Si, 3.3 percent rare earth elements) with Ce was performed in a high-frequency induction furnace in the presence of flux composed of chlorous salts. An excess of Ce (50 percent) was introduced into the molten Mn. A eutectic phase diagram was constructed in which the eutectic was at 635°C and 5 percent Mn. The liquidus line has four branches corresponding to the crystallization of the three Mn modifications and to the high-temperature modification of Ce. At temperatures above 1087° and with a Ce content varying between 0 and 27 percent, δ Mn crystals primarily are formed; at 27-35 percent Ce and temperatures between 1087° and 998° β Mn is formed, and at 35-95 percent Ce and temperatures between

Card 1/2

137-58-3-5832

An Investigation of the Mn-Ce System

998° and 635°, β Mn prevails. The nature of the transformations at 1087° and 998° has not been established.

R M

Card 2/2

MIRGALOVSKAYA M.

137-58-2-3916

Translation from Referativnyy zhurnal Metallurgiya, 1958 Nr 2 p 234 (USSR)

AUTHORS Mirgalovskaya M.S. Matkova L.N. Komova E.M.

TITLE The Mg-Al-Mn System (Sistema Mg-Al-Mn)

PERIODICAL Tr. In-ta metallurgii AN SSSR 1957, Nr 2 pp 139-148

ABSTRACT The Mg corner of the Mg-Al-Mn system was investigated by microscopic and x-ray methods, and by measurement of microhardness. It was established that the field of primary crystallization of α Mg borders the fields of crystallization of the λ phase (solution of Al in α Mn) the ξ phase of the Al-Mn system and the γ phase of the Mg-Al systems. The position of the corresponding monovariant curves was defined. It is shown that addition of up to 1% Al increases the solubility of β Mn and α Mg by 4-9 times. The invariant points were found at 438.5° (~35% Al and 0.5% Mn) and at 438° (37.5% Al and 0.5% Mn). In the former the liquid $\rightleftarrows \lambda \rightleftarrows \alpha+\xi$ reaction occurs, and in the latter liquid $+\xi \rightleftarrows \lambda +\gamma$

D.B.

Card 1/1

1. Aluminum-magnesium-manganese systems--Microscopic analysis
2. Aluminum-magnesium-manganese systems--X-ray analysis

Mirgalovskaya, M. S.

Tr. 1958-2-27

Translation from Referativnyy zhurnal Metallurgiya, 1958, Nr 2, p 3 (USSR)

AUTHORS Ageyev, N. V., Mirgalovskaya, M. S.

TITLE The Third All-Union Conference on Physicochemical Analysis (Tret'ye Vsesoyuznoye soveshchaniye po fiziko-khimicheskomu analizu)

PERIODICAL Tr. In-ta metallurgii AN SSSR, 1957, Nr 2, pp 230-232

ABSTRACT The conference was held in Moscow on June 1-4, 1955. Attention was given to the subjects of metal purification, the properties of rare and rare-earth metals, investigative techniques, the physicochemical nature of phases, and to various other matters. In the concluding resolution note was taken of a number of shortcomings in the work of the scientific research institutes.

P. N.

1. Furnaces--Characteristics--USSR

Card 1/1

24-10-10/26

AUTHORS: Glazov, V. M., Mirgalovskaya, M.S. and Petrakova, L. A. (Moscow)

TITLE: New semi-conductor materials with a chalcopyrite structure. (Novyye poluprovodnikovyye materialy so strukturoy khalkopirita)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1957, No.10, pp.68-70 (USSR)

ABSTRACT: The aim of the here described work was to produce and investigate twelve compounds of the ABX_2 type where A - Cu, Ag; B - Al, Ga, In; X - Se, Te. The synthesis of the compounds was effected directly by melting the elements inside evacuated and sealed quartz ampules. The compounds containing aluminium were synthesized in graphite crucibles with a lid which were also placed into evacuated and sealed quartz ampules. It was found that all the compounds had a similar structure; substitution of copper by silver produced on the X-ray pictures a splitting of the lines which is attributed to an appreciable change in the ratio of the lattice parameters. The results of determination of the lattice parameters of the compounds by means of X-ray structural analysis are entered in the Table, p.70 for twelve compounds. The

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30-8-27/37

AUTHORS: Ageyev, N. V., Mirgalovskaya, M. S.
Polyakova, R. S.

TITLE: The Investigation of the Diagrams Concerning the Quality of the Metal Systems (Issledovaniye diagramm sostoyaniya metallicheskikh sistem).

PERIODICAL: Vestnik Akademii Nauk SSSR, 1957, Vol. 27, Nr 8, pp. 103-104 (USSR)

ABSTRACT: This is a report dealing with the conference held at the Baykov Institute for Metallurgy (May 17 - May 21), which was attended by numerous representatives of scientific institutes as well as by foreign guests. I. P. Bardin delivered the opening address in the course of which he gave a survey of the development of research work. The conference dealt also with material which had accumulated in other countries. Particular attention was paid to experimental results with repsect to the investigation of diagrams (on the nature of systems of titanium, magnium, aluminum, chromium, tungsten, molybdenum, as well as of the metals of the VIII group of the periodical system). The wish was expressed at the conference that a commission for coordination be attached to the Institute for Metallurgy.

AVAILABLE: Library of Congress

Card 1/1

3 42/47

AUTHOR: Mirgalovskaya, M. S.

TITLE: A Method for the Investigation of the Phase Diagrams of Some Systems on the Basis of Magnesium (Metody issledovaniya diagramm sostoyaniya nekotorykh sistem na osnove magniya)

PERIODICAL: Zhurnal Neorganicheskoy Khimii 1958 Vol.3 Nr 3 pp.797 798 (USSR)

ABSTRACT: The phase diagrams of the systems Mg-Mn Ce and Mg Mn Al were investigated. The modified method of isothermal clarification was employed. In the employment of this method it is necessary previously to determine the initial temperature of the simult aneous crystallization of the alloys by the thermographic ana lysis. Moreover in the employment of this method the quantity of components needed for obtaining a supersaturated melt and the saturation time must previously be determined. With the aid of this method the phase diagrams of Mg Zn Zr, Mg Mn Ce and Mg-Mn-Al were constructed. These diagrams are considerably different from those hitherto published. The elaborated meth od of isothermal clarification permits successfully to in

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78-5 3 42/47

A Method for the Investigation of the Phase Diagrams of Some Systems on the Basis of Magnesium

vestigate the alloys consisting of components which are highly different in their specific weight and which possess small thermal effects of crystallization. There are 3 references 3 of which are Soviet.

ASSOCIATION: Institut metallurgii im. A. A. Baykova, Akademii nauk SSSR (Metallurgical Institute imeni A. A. Baykov, AS USSR)

SUBMITTED: June 25, 1957

Card 2/2

VOL, Abram Yevgen'yevich; AGEYEV, N.V., red.; ABRIKOSOV, N.Kh., doktor tekhn.nauk, red.; KORNILOV, I.I., red.; SAVITSKIY, Ye.M., red.; OSIPOV, K.A., doktor tekhn.nauk, red.; GUSEVA, L.N., kand.khim. nauk, red.; MIRGALOVSKAYA, M.S., kand.khim.nauk, red.; SHKLOVSKAYA, I.Yu., red.; MURASHOVA, N.Ya., tekhn.red.

[Structure and properties of binary metal systems] Stroenie i svoistva dvoinykh metallicheskikh sistem. Pod rukovodstvom N.V.Ageeva. Moskva, Gos.izd-vo fiziko-matem.lit-ry. Vol.1. [Physicochemical properties of elements; nitrogen, actinium, aluminum, americium, barium, beryllium, and boron systems] Fiziko-khimicheskie svoistva elementov; Sistemy azota, aktiniia, aliuminiia, ameritsiia, bariia, berilliia, bora. 1959. 755 p. (MIRA 13:3)

1. Chlen-korrespondent AN SSSR (for Ageyev).
(Metals) (Phase rule and equilibrium)

SOV/180-59-2-18/34

AUTHORS: Mirgalovskaya, M.S., and Skudnova, Ye.V. (Moscow)

TITLE: Reaction of Tellurium with Aluminium Antimonide (O vzaimodeystvii tellura s antimonidom alyuminiya)

PERIODICAL: Izvestiya akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1959, Nr 2, pp 104-108 (USSR)

ABSTRACT: Aluminium antimonide, AlSb, is a potentially useful semiconductor material in the radio industry and for solar batteries (Ref 1). Addition of tellurium improves the electrical properties of the material (Ref 3). The authors outline available information in the systems Al-Sb, Sb-Te and Al-Te and go on to describe their own experiments. The materials were prepared from grade AV-000 aluminium, grade SU-00 antimony purified by vacuum distillation and containing traces of Si, Al, Fe and Mg, and tellurium melted from powder and twice vacuum distilled (containing traces of Si, Mg, Al, [illegible]). Alloys were prepared by melting [illegible] in graphite or corundum crucibles when using a resistance or induction furnace, respectively. The melts were kept at 1200 °C for an hour; occasional checks of composition were carried out because of possible volatilization. Thermal

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Reaction of Tellurium with Aluminium Antimonide

analysis (with recording on a Kurnakov pyrometer), microstructure-study and microhardness determination (with a type PMT-3 machine) were the methods mainly used. The equilibrium diagram for the system Al-Sb-Te is in Fig 1. Figs 2a and 2b show the microstructure of the AlSb-Te; from these and microhardness determinations with various heat treatments the authors assume the existence in the Al-Sb-Te system of some regions solid solutions based on aluminium antimonide. To elucidate phase equilibria in the system the AlSb - Al_2Te_3 and AlSb - Sb_2Te_3 sections were studied. Figs 2 v and g show microstructures for the first and Fig 3a for the second section, the corresponding equilibrium (polythermal) diagrams being given in Figs 4 and 5. To provide additional data the sections Al_2Te_3 - Sb_2Te_3 and Al_2Te_3 - Sb were studied, the microstructures being shown in Figs 3б and v and 3g, respectively, and the equilibrium diagrams of Al_2Te_3 - Sb_2Te_3 in Fig 6. The authors conclude from their results that tellurium is not in equilibrium with

SOV/180-59-2-18/34

Reaction of Tellurium with Aluminium Antimonide

aluminium antimonide. They have shown that AlSb-Al_2Te_3, Al_2Te_3-Sb_2Te_3 and Al_2Te_3-Sb are the quasi-binary sections of the system and have triangulated it accordingly. A considerable region of solid solutions based on AlSb exists on the AlSb-Al_2Te_3 section. It has been shown that the solubility of Al_2Te_3 and AlSb reaches 40 atomic % Al_2Te_3.

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There are 6 figures, 1 table and 11 references, 7 of which are Soviet and 4 English. (The figures include 2 plates)

SUBMITTED: April 24, 1958

67291

5.2610

SOV/180-59-4-24/48

AUTHORS: Mirgalovskaya, M.S. and Skudnova, Ye.V. (Moscow)

TITLE: Study of the Structure and Properties of Aluminium Telluride

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1959, Nr 4, pp 148-152 + 1 plate (USSR)

ABSTRACT: Aluminium telluride was prepared from zone refined aluminium and tellurium melted together in stoichiometric proportions at 1000°C under argon in an induction or resistance furnace. Fig 1 shows the microstructure. Fig 2 shows a series of X-ray photographs of (a) Al_2Te_3 in air, (b) pure Te, (c) Al_2Te_3 in A. Calculations from the lines obtained are given in Table 1. It is shown that Al_2Te_3 has a hexagonal structure with a = 4.07, c = 6.93 and c/a = 1.69. From a comparison with Al_2Se_3 it is shown that Al_2Te_3 has a lattice of the Wurtzite type. Table 2 shows the properties of sulphides, selenides and tellurides of aluminium. Al_2Te_3 is a deficiency-type conductor with conductivity 185 $ohm^{-1}cm^{-1}$. The temperature coefficient is 270 μV/°C Fig 4 shows that the conductivity increases markedly at melting point.

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67291
SOV/180-59-4-24/48

Study of the Structure and Properties of Aluminium Telluride

Fig 5 shows log conductivity against inverse temperature for very pure materials. This shows it is an intrinsic semiconductor. Unfortunately its instability in air makes practical applications impossible. There are 5 figures, 2 tables and 8 references (1 English, 2 German 2 French and 3 Soviet).

SUBMITTED: November 3, 1958

4

Card 2/2

18(6)

AUTHORS: Mirgalovskaya, M. S., Skudnova Ye. V. SOV/78-4-5-28/45

TITLE: Investigation of the Alloy of the System AlSb-Al_2Te_3 (Issledovaniye splavov sistemy AlSb-Al_2Te_3)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959 Vol 4, Nr 5, pp 1113-1120 (USSR)

ABSTRACT: The solid solutions in the system AlSb-Al_2Te_3 were investigated. The alloy was produced from purest aluminum of the type AV-000 and antimony of the type SU-[illegible] and tellurium, which was produced by double sublimation in a vacuum. The alloy was melted in a corundum crucible in an argon atmosphere. The following investigations of the alloys were carried out: differential-thermal analysis, ground-section structural analysis, microhardness, radioanalysis, and investigation of electric conductivity. The phase diagram of the quasi-binary section AlSb-Al_2Te_3 is shown by figure 1. The solidus line in this system was determined. By the microstructural method and by X-ray analysis the solubility limit of Al_2Te_3 in AlSb was determined. The results obtained by microstructural

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Investigation of the Alloy of the System AlSb-Al_2Te_3 SOV/78-4-5-28/46

analyse d show that the cast alloys of the system AlSb-Al_2Te_3 have a phase structure up to 15 % by weight Al_2Te_3. In alloys with more than 15% by weight Al_2Te_3 inter-crystalline liquation occurs. The microstructure pictures are shown by figure 4. Samples with more than 15 % by weight Al_2Te_3 have two phases. By radiographical investigation the character of the solid solutions was investigated. It was found that, with formation of the solid solution Al_2Te_3 in SbAl a heterovalent isomerism occurs i. e. that a heterovalent exchange takes place. The density of the alloy of the system AlSb-Al_2Te_3 increases within the range of the solid solution with an increase of Al_2Te_3-concentration. Data are given by figure 6. The electrical properties of the solid solutions AlSb-Al_2Te_3 were investigated. The dependence of electric conductivity on temperature alloys with 24 % by weight Al_2Te_3 was investigated and is shown by figure 7. The dependence of

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Investigation of the Alloy of the System AlSb-Al_2Te_3 SOV/78-4-5-28/46

the thermal conductivity of the alloy on the composition of the system AlSb-Al_2Te_3 was investigated and is shown by figure 8. Alloys with more than 20 % by weight Al_2Te_3 are p-conductors. There are 8 figures, 1 table, and 11 references, 8 of which are Soviet.

SUBMITTED: January 12, 1959

Card 3/3

24 7100

AUTHORS: Mirgalovskaya, M. S., Strel'nikova, I. A.

69032
S/078/60/005/04/038/040
B004/B016

TITLE: Twin Formation in Aluminum Antimonide

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol 5, Nr 4, pp 985 - 986 (USSR)

ABSTRACT: The purpose of this investigation was that of determining the conditions for the formation of twin crystals which disturb the electric properties in the breeding of semiconductor crystals. AlSb was obtained by melting from pure Sb and Al of the AV-000 type at 1100°. The monocrystals were prepared according to Chokhral'skiy's method in a device described in reference 8. The authors describe the structural modifications on this device which were made in order to obtain the most favorable temperature gradient for the breeding of monocrystals (Radial gradient $dT/dr \longrightarrow 0$, axial gradient dT/dz at a minimum). The breeding of the crystals was carried out in helium atmosphere at 1.5 atm. Helium was purified by means of KAD active charcoal. The radiograms according to Laue of the crystal directions [110], [112], [111] are shown in figure 1. The direction [100] was too unfavorable to be dealt with (Ref 2). The authors obtained the following results: In direction [112] twins are mainly formed under an angle of 83° to the direction of growth. In direction

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69032

Twin Formation in Aluminum Antimonide

S/078/60/005/04/038/040
B004/B016

[111] no twins are formed as a rule, but they do form if there is a deviation by 1 - 2° from this direction. If the crystal grows in direction [110], twins are formed in all cases. Direction [111] must therefore be regarded as the optimum one for the breeding of AlSb monocrystals. These conclusions may also hold for GaSb and InSb. There are 2 figures and 8 references, 3 of which are Soviet.

SUBMITTED: October 23, 1959

Card 2/2

B/191

S/078/60/005/07/06/014
B004/B056

5.2610

AUTHORS: Mirgalovskaya, M. S., Matkova, L. I.

TITLE: The Problem of the Production of Indium Antimonide of High Purity

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 7, pp. 1551-1554

TEXT: The authors produced InSb from spectrally pure In and Sb, as well as from industrial indium (10^{-2}% impurities) at 650-700°C and purified it by zonal recrystallization at 10^{-3} torr in a quartz tube. The results obtained confirm the efficacy of this method. The distribution of impurities in the melt after recrystallization corresponded to the segregation coefficients mentioned in publications. Table 1 gives the measured results for samples cut out from the center of the melt. The change in the electrical characteristic values along the melt is shown by a figure and by Table 2. In the case of an optimum shifting rate V of the zone of 8-10 mm/h, macrocrystalline samples with the following

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optimum properties were obtained: μ = 82,500 $cm^2/v.sec$; ρ = 0.01 ohm.cm; R_X = -700 $cm^3/coul$ and n = $1.3.10^{16}$ cm^{-3} (Table 3). By the method developed by Chokhral'skiy, single crystals with the following properties were obtained with a drawing rate of 0.7-0.8 mm/min, rotation of the inoculating agent of 3 to 4 rpm and rotation of the crucible of 4 to 5 rpm: μ = 50,000 $cm^2/v.sec$; ρ = 0.01 ohm.cm; R_X = -550 $cm^3/coul$ and n = $1.3.10^{16}$ cm^{-3} (Table 4). The reduced value of μ is ascribed to impurities of the crucible, the heater, argon and the reagents. As shown by Table 4, these impurities occur also in the case of repeated drawing of single crystals with greater intensity. The authors refer to papers by V. M. Glazov and D. A. Petrov (Ref. 12). There are 1 figure, 4 tables, and 16 references: 7 Soviet, 2 British, and 6 American.

SUBMITTED: April 8, 1959

Card 2/2

3(5)9

AUTHORS Mingalovskaya, M. S., Komova, E. M.

TITLE On the interaction of tellurium with gallium arsenide

PERI (Vsesoyuznyy zaochnyy, Metallurgiya, n. ... 1... 3... (V sb. "Vopr. metallurgii i fiz. poluprovodnikov" ... 1961, 13... - 1...)

TEXT To clear up problems connected with alloying of ..., the ... investigates the nature of its interaction with Te. GaAs ... alloying the initial components in evacuated quartz ampoules, were subjected to zonal cleaning in evacuated quartz tubes. After 10 passes at the ... 2... - 30 mm wide, at 0.3 mm/min, ingots were obtained whose middle sections contained Cu only in an amount of $<10^{-3}$%. The majority of admixtures (Mg, Zn, Al, Fe) had a distribution factor of >1 in GaAs. The material obtained after zonal cleaning had a p-type conductivity, $\rho \simeq 0.05$ - 0.08 ohm · cm; $R_x \simeq 40$ - ... cm^3/c and $n \simeq 1.2$ - 1.8 10^{17} cm^{-3}. Maximum mobility at individual sections of the ingot was μ_p = 1,000 $cm^2/v \cdot sec$. Material of highest purity after zonal cleaning was used to draw out single crystals by Chokhral'skiy's method carried out in

Card 1/2

On the Interaction of.

S/137/62/000/002/[illegible]/144
A006/A101

Argon atmosphere at a rate of 0.8 mm/min and 3 rmp crucible rotation. Single crystal plates cut out of the ingots obtained had $\rho \simeq 0.06$ - [illegible] ohm · cm, $R_x \simeq$ $\simeq 50$ - 70 cm^3/k, μ_p = 600 - 800 cm^2/v · sec, and $n \simeq 1.3 \cdot 10^{1}$ cm^{-3}. GaSb specimens after alloying with Te in a quantity of 0.1% had n-type conductivity, ρ = = 0.024 ohm · cm, $R_x \simeq 33$ cm^3/k, $\mu_n \simeq 1,170$ cm^2/v · sec and $n \simeq$ [illegible] $\cdot 10^{17}$ cm^{-3}. To reveal the nature of interaction between GaSb and Te, the Ga-Sb-Te system was studied over the sections GaSb-Te; GaSb-Ga_2Te_3; GaSb-GaTe and GaTe-Sb. The investigation was carried out by the method of microstructural, thermal and X-ray analyses. Simultaneously microhardness of the phases was studied. The presence of two quasi-binary eutectic type sections was established, namely: GaTe-Sb (7% GaTe, t_{eut} = 590°C) and GaSb-GaTe (14% GaTe, t_{eut} = 695°C). In the second system there is a zone of GaTe solid solution in GaSb, extending up to 16.4% GaTe and including a portion of alloys of section GaSb-Ga_2Te_3. Thus in the alloying of GaSb with tellurium an equilibrium is observed between GaSb and GaTe which form solid solutions of some spread in the ternary system

A. Nasnel'ski

[Abstracter's note: Complete translation]

Card 2/2